



U.S. Environmental Protection Agency  
Region 8  
Technical and Management Services

Laboratory Services Program

Certificate of Analysis

Ref: 8TMS-L

MEMORANDUM

Date: 08/11/15

Subject: Analytical Results--- **Upper Animas\_Surface Water 2\_AUG 2015\_A096**

From: Don Goodrich; EPA Region8 Analytical Chemistry WAM

To: <ClientManager>  
Superfund  
1595 Wynkoop Street

Received Sample Set(s), [Work Order : Date Received]:  
[ C150802 : 08/09/2015 ]

Attached are the analytical results for the samples received from the Upper Animas Surface Water 2\_AUG 2015\_A096 sampling event, according to TDF [none]. All analyses were performed within their method specified holding times unless otherwise noted in the following narrative.

These samples were prepared, analyzed, and verified by the Environmental Services Assistance Team Laboratory (ESAT) according to the requirements of the Technical Direction Form (TDF).

Note: The laboratory herewith transmits this deliverable to the program/project partner for determination of "final data usability" which may include data validation and data quality assessment per and in accordance with EPA QA/G-8, *Guidance on Environmental Data Verification and Data Validation*, November 2002, EPA/240/R-02/004. Laboratory data qualifiers are applied based on the USEPA *Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, October 2004, referred to as "NFGI".

Laboratory policy is to dispose of any remaining sample 60 days after data analysis packages are delivered to EPA. If you would like the laboratory to retain the samples for a period longer than 60 days, please contact Don Goodrich within the 60 day period at (303) 312-6687.

TDF #: [none]

**Case Narrative****C150802**

Quality Assessment: Unless indicated by exception, the QA/QC associated with this sample set produced data within the TDF-specified criteria.

Holding Times: All samples were analyzed within their method-specified technical holding time(s).

1. Initial and Continuing calibration blanks (ICBs and CCBs).  
Exceptions: None.
2. Preparation (PB) / Method blanks (MB)  
Exceptions: None.
3. Interference Checks (ICSA / ICSAB) for ICP-MS and ICP-OE analyses only.  
Exceptions: None.
4. Initial and Continuing calibration verification analyses (ICVs, SCVs and CCVs).  
Exceptions: None.
5. Laboratory Control Sample (LCS) or second source analysis or SRM.  
Exceptions: None.
6. Laboratory Fortified blank (LFB) / Blank spike (BS), same source as used for the matrix spikes.  
PBS performed with analyses/methods requiring preparation or digestion prior to analysis.  
Exceptions: None.
7. Contract Reporting Detection Limit Standard, labeled as CRA, CRDL or CRL.  
Exceptions: In ICP-MS sequence 1508051, cadmium recovered low in the CRL. As a result, associated samples were qualified "J" as estimated for cadmium.
8. Laboratory Duplicate (DUP). "Source" identifies field sample duplicated in the laboratory. If either the "source" or the duplicate result is <5X the reporting limit, the %D limit of 20% does not apply.  
Exceptions: In ICP-MS batch 1508043, lead recovered high in the DUP. As a result, the source sample was qualified "J" as estimated for lead.
9. Laboratory Matrix Spike (MS) and spike duplicate (MSD). "Source" defines original field sample fortified prior to analysis. Percent recovery (%R) limits do not apply when sample concentration(s) exceed the corresponding analyte spike level by a factor of 4 or greater.  
Exceptions: In mercury batch 1508045, MS1 recovery was low, as a result, associated sample was "J" flagged as estimated.
10. Serial Dilution sample analysis (SRD). "Source" is parent field sample diluted 1:5 in the laboratory. Performed for ICP-OE and ICP-MS metals analyses. Percent difference (%D) limits do not apply when analyte concentration(s) are below 50x the source sample's MDL (or 10x it's PQL).  
Exceptions: None.
11. Internal standards, criteria specified for ICP-MS analyses only, monitored at the instrument.  
Exceptions: None.
12. Any calibration using more than two-points produced a correlation coefficient equal to or greater than 0.995.  
Exceptions: None.

TDF #: [none]

## Acronyms and Definitions:

ESAT	Environmental Services Assistance Team
J	Data Estimated qualifier (also applied to all data less than PQL, greater than or equal to MDL)
MDL	Method Detection Limit
PQL	Practical Quantitation Limit, also known as reporting limit.
RPD	Relative Percent Difference (difference divided by the mean)
%D	Percent difference, serial dilution criteria unit, difference divided by the original result
%R	Percent recovery, analyzed (less sample contribution) divided by true value
<	Analyte NOT DETECTED at or above the Method Detection Limit(MDL)
mg/L	Parts per million (milligrams per liter). Solids equivalent = mg/Kg.
ug/L	Parts per billion (micrograms per liter). Solids equivalent = ug/Kg.
NR	No Recovery (matrix spike) - Often seen for calcium/magnesium when their concentration exceeds the spike level by > 4x.
NFGI	USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review/October 2004
RE	Sample Re-analysis. Usually seen on raw data and sequences for required sample dilutions due to over-range analytes.
U	Analyte not detected at or above MDL qualifier
D	Diluted value qualifier.

## Method(s) Summary :

As defined in the Technical Direction Form (TDF), some or all of the methods listed below were used for the determination of the reported target analytes.

From EPA's *Methods for the Determination of Metals in Environmental Samples*, Supplement I, May 1994, dissolved, total, and/or total recoverable metals were determined by:

- Method 200.7 / 6010B using a PE Optima ICP -OE (ICP).
- Method 200.8 / 6020 using a Perkin -Elmer Elan 6000 ICP -MS.
- Method 200.2 for total recoverable metals (only) digestion.
- Method 245.1 using a Perkin -Elmer FIMS CV AA (aqueous mercury only).

From *Standard Methods for the Examination of Water and Wastewater*, 18<sup>th</sup> Edition, 1992, Method 2340B was used for the calculated hardness determination. Hardness is reported as mg (milligram) equivalent CaCO<sub>3</sub> per liter (L) determined as follows:

$$\text{Calculated hardness} = 2.497 * (\text{Calcium, mg/L}) + 4.118 * (\text{Magnesium, mg/L}).$$

From EPA's *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, SW-846,

- Method 3015A was used for microwave assisted total metals digestion.
- Method 7473 was used for mercury in solids.

From EPA's *Determination of Inorganic Anions by Ion Chromatography*, Revision 2.1, 1993, Method 300.0 was used to determine the anions.

From EPA's *Methods for Chemical Analysis of Water and Wastes*, March 1983:

- Method 310.1 was followed for the alkalinity determination.
- Method 160.1 was followed for gravimetric total dissolved solids (TDS) determination.
- Method 160.2 was used for gravimetric total suspended solids (TSS) determination.
- Method 415.3 was used for total organic carbon (TOC) determination using either an Apollo 9000 or Phoenix 8000 Non-Dispersive IR (NDIR) system. Also known as dissolved organic carbon (DOC) when performed on the dissolved sample fraction.

The quality control procedures listed in the TDF request were utilized by ESAT to verify accuracy of the results and to evaluate any matrix interferences.

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

## Metals (Dissolved) by EPA 200/7000 Series Methods

Station ID: AMIMAS-ROTARY PARK-0000

Date / Time Sampled: 08/07/15 00:00

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-02 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	< 50.0	U	ug/L	20.0	1	08/10/2015	SV	1508038
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/10/2015	SV	1508038
200.7	Calcium	61100		ug/L	100	1	08/10/2015	SV	1508038
200.7	Iron	< 250	U	ug/L	100	1	08/10/2015	SV	1508038
200.7	Magnesium	7820		ug/L	100	1	08/10/2015	SV	1508038
200.7	Manganese	464		ug/L	2.00	1	08/10/2015	SV	1508038
200.7	Potassium	1990		ug/L	250	1	08/10/2015	SV	1508038
200.7	Sodium	10200		ug/L	250	1	08/10/2015	SV	1508038
200.7	Zinc	53.8		ug/L	10.0	1	08/10/2015	SV	1508038
200.8	Antimony	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Arsenic	< 2.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Barium	22.1		ug/L	5.00	1	08/10/2015	SV	1508039
200.8	Cadmium	0.490	J	ug/L	0.100	1	08/10/2015	SV	1508039
200.8	Chromium	1.27	J	ug/L	1.00	1	08/10/2015	SV	1508039
200.8	Cobalt	0.994		ug/L	0.100	1	08/10/2015	SV	1508039
200.8	Copper	3.87		ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Lead	0.289		ug/L	0.100	1	08/10/2015	SV	1508039
200.8	Molybdenum	< 1.00	U	ug/L	1.00	1	08/10/2015	SV	1508039
200.8	Nickel	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Selenium	< 2.00	U	ug/L	1.00	1	08/10/2015	SV	1508039
200.8	Silver	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Thallium	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Vanadium	< 3.00	U	ug/L	2.00	1	08/10/2015	SV	1508039
2340B	Hardness	185		mg/L	2	1	08/10/2015	SV	1508038

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

## Metals (Dissolved) by EPA 200/7000 Series Methods

Station ID: AMIMAS-ROTARY PARK-0030

Date / Time Sampled: 08/07/15 00:30

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-05 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	< 50.0	U	ug/L	20.0	1	08/10/2015	SV	1508038
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/10/2015	SV	1508038
200.7	Calcium	62700		ug/L	100	1	08/10/2015	SV	1508038
200.7	Iron	< 250	U	ug/L	100	1	08/10/2015	SV	1508038
200.7	Magnesium	7930		ug/L	100	1	08/10/2015	SV	1508038
200.7	Manganese	676		ug/L	2.00	1	08/10/2015	SV	1508038
200.7	Potassium	2020		ug/L	250	1	08/10/2015	SV	1508038
200.7	Sodium	10100		ug/L	250	1	08/10/2015	SV	1508038
200.7	Zinc	84.8		ug/L	10.0	1	08/10/2015	SV	1508038
200.8	Antimony	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Arsenic	< 2.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Barium	25.1		ug/L	5.00	1	08/10/2015	SV	1508039
200.8	Cadmium	0.699	J	ug/L	0.100	1	08/10/2015	SV	1508039
200.8	Chromium	< 2.00	U	ug/L	1.00	1	08/10/2015	SV	1508039
200.8	Cobalt	1.66		ug/L	0.100	1	08/10/2015	SV	1508039
200.8	Copper	4.32		ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Lead	0.230		ug/L	0.100	1	08/10/2015	SV	1508039
200.8	Molybdenum	< 1.00	U	ug/L	1.00	1	08/10/2015	SV	1508039
200.8	Nickel	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Selenium	< 2.00	U	ug/L	1.00	1	08/10/2015	SV	1508039
200.8	Silver	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Thallium	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Vanadium	< 3.00	U	ug/L	2.00	1	08/10/2015	SV	1508039
2340B	Hardness	189		mg/L	2	1	08/10/2015	SV	1508038

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

## Metals (Dissolved) by EPA 200/7000 Series Methods

Station ID: AMIMAS-ROTARY PARK-1000

Date / Time Sampled: 08/07/15 10:00

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-08 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	20.6	J	ug/L	20.0	1	08/10/2015	SV	1508038
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/10/2015	SV	1508038
200.7	Calcium	52100		ug/L	100	1	08/10/2015	SV	1508038
200.7	Iron	< 250	U	ug/L	100	1	08/10/2015	SV	1508038
200.7	Magnesium	7140		ug/L	100	1	08/10/2015	SV	1508038
200.7	Manganese	131		ug/L	2.00	1	08/10/2015	SV	1508038
200.7	Potassium	1830		ug/L	250	1	08/10/2015	SV	1508038
200.7	Sodium	9920		ug/L	250	1	08/10/2015	SV	1508038
200.7	Zinc	24.0		ug/L	10.0	1	08/10/2015	SV	1508038
200.8	Antimony	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Arsenic	< 2.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Barium	46.0		ug/L	5.00	1	08/10/2015	SV	1508039
200.8	Cadmium	0.190	J	ug/L	0.100	1	08/10/2015	SV	1508039
200.8	Chromium	1.77	J	ug/L	1.00	1	08/10/2015	SV	1508039
200.8	Cobalt	0.276		ug/L	0.100	1	08/10/2015	SV	1508039
200.8	Copper	3.58		ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Lead	0.824		ug/L	0.100	1	08/10/2015	SV	1508039
200.8	Molybdenum	< 1.00	U	ug/L	1.00	1	08/10/2015	SV	1508039
200.8	Nickel	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Selenium	< 2.00	U	ug/L	1.00	1	08/10/2015	SV	1508039
200.8	Silver	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Thallium	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Vanadium	< 3.00	U	ug/L	2.00	1	08/10/2015	SV	1508039
2340B	Hardness	159		mg/L	2	1	08/10/2015	SV	1508038

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

## Metals (Dissolved) by EPA 200/7000 Series Methods

Station ID: AMIMAS-ROTARY PARK-2005

Date / Time Sampled: 08/06/15 20:05

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-11 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	59.4		ug/L	20.0	1	08/10/2015	SV	1508038
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/10/2015	SV	1508038
200.7	Calcium	51200		ug/L	100	1	08/10/2015	SV	1508038
200.7	Iron	< 250	U	ug/L	100	1	08/10/2015	SV	1508038
200.7	Magnesium	7020		ug/L	100	1	08/10/2015	SV	1508038
200.7	Manganese	75.3		ug/L	2.00	1	08/10/2015	SV	1508038
200.7	Potassium	1830		ug/L	250	1	08/10/2015	SV	1508038
200.7	Sodium	10200		ug/L	250	1	08/10/2015	SV	1508038
200.7	Zinc	57.0		ug/L	10.0	1	08/10/2015	SV	1508038
200.8	Antimony	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Arsenic	0.643	J	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Barium	50.6		ug/L	5.00	1	08/10/2015	SV	1508039
200.8	Cadmium	0.139	J	ug/L	0.100	1	08/10/2015	SV	1508039
200.8	Chromium	2.12		ug/L	1.00	1	08/10/2015	SV	1508039
200.8	Cobalt	0.261		ug/L	0.100	1	08/10/2015	SV	1508039
200.8	Copper	4.09		ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Lead	3.26		ug/L	0.100	1	08/10/2015	SV	1508039
200.8	Molybdenum	< 1.00	U	ug/L	1.00	1	08/10/2015	SV	1508039
200.8	Nickel	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Selenium	< 2.00	U	ug/L	1.00	1	08/10/2015	SV	1508039
200.8	Silver	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Thallium	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Vanadium	< 3.00	U	ug/L	2.00	1	08/10/2015	SV	1508039
2340B	Hardness	157		mg/L	2	1	08/10/2015	SV	1508038

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

## Metals (Dissolved) by EPA 200/7000 Series Methods

Station ID: AMIMAS-ROTARY PARK-2108

Date / Time Sampled: 08/06/15 21:08

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-14 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	61.1		ug/L	20.0	1	08/10/2015	SV	1508038
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/10/2015	SV	1508038
200.7	Calcium	51700		ug/L	100	1	08/10/2015	SV	1508038
200.7	Iron	< 250	U	ug/L	100	1	08/10/2015	SV	1508038
200.7	Magnesium	7090		ug/L	100	1	08/10/2015	SV	1508038
200.7	Manganese	77.2		ug/L	2.00	1	08/10/2015	SV	1508038
200.7	Potassium	1880		ug/L	250	1	08/10/2015	SV	1508038
200.7	Sodium	10300		ug/L	250	1	08/10/2015	SV	1508038
200.7	Zinc	61.4		ug/L	10.0	1	08/10/2015	SV	1508038
200.8	Antimony	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Arsenic	< 2.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Barium	47.6		ug/L	5.00	1	08/10/2015	SV	1508039
200.8	Cadmium	0.134	J	ug/L	0.100	1	08/10/2015	SV	1508039
200.8	Chromium	2.31		ug/L	1.00	1	08/10/2015	SV	1508039
200.8	Cobalt	0.364		ug/L	0.100	1	08/10/2015	SV	1508039
200.8	Copper	2.55		ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Lead	0.209		ug/L	0.100	1	08/10/2015	SV	1508039
200.8	Molybdenum	< 1.00	U	ug/L	1.00	1	08/10/2015	SV	1508039
200.8	Nickel	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Selenium	< 2.00	U	ug/L	1.00	1	08/10/2015	SV	1508039
200.8	Silver	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Thallium	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Vanadium	< 3.00	U	ug/L	2.00	1	08/10/2015	SV	1508039
2340B	Hardness	158		mg/L	2	1	08/10/2015	SV	1508038



Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

## Metals (Dissolved) by EPA 200/7000 Series Methods

Station ID: AMIMAS-ROTARY PARK-2200

Date / Time Sampled: 08/06/15 22:00

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-17 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	47.5	J	ug/L	20.0	1	08/10/2015	SV	1508038
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/10/2015	SV	1508038
200.7	Calcium	52200		ug/L	100	1	08/10/2015	SV	1508038
200.7	Iron	< 250	U	ug/L	100	1	08/10/2015	SV	1508038
200.7	Magnesium	7140		ug/L	100	1	08/10/2015	SV	1508038
200.7	Manganese	81.0		ug/L	2.00	1	08/10/2015	SV	1508038
200.7	Potassium	1900		ug/L	250	1	08/10/2015	SV	1508038
200.7	Sodium	10400		ug/L	250	1	08/10/2015	SV	1508038
200.7	Zinc	47.0		ug/L	10.0	1	08/10/2015	SV	1508038
200.8	Antimony	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Arsenic	< 2.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Barium	47.7		ug/L	5.00	1	08/10/2015	SV	1508039
200.8	Cadmium	< 0.200	J,	ug/L	0.100	1	08/10/2015	SV	1508039
200.8	Chromium	1.98	J	ug/L	1.00	1	08/10/2015	SV	1508039
200.8	Cobalt	0.295		ug/L	0.100	1	08/10/2015	SV	1508039
200.8	Copper	3.50		ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Lead	0.161	J	ug/L	0.100	1	08/10/2015	SV	1508039
200.8	Molybdenum	< 1.00	U	ug/L	1.00	1	08/10/2015	SV	1508039
200.8	Nickel	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Selenium	< 2.00	U	ug/L	1.00	1	08/10/2015	SV	1508039
200.8	Silver	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Thallium	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Vanadium	< 3.00	U	ug/L	2.00	1	08/10/2015	SV	1508039
2340B	Hardness	160		mg/L	2	1	08/10/2015	SV	1508038

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

## Metals (Dissolved) by EPA 200/7000 Series Methods

Station ID: AMIMAS-ROTARY PARK-2300

Date / Time Sampled: 08/06/15 23:00

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-20 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	< 50.0	U	ug/L	20.0	1	08/10/2015	SV	1508038
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/10/2015	SV	1508038
200.7	Calcium	54800		ug/L	100	1	08/10/2015	SV	1508038
200.7	Iron	< 250	U	ug/L	100	1	08/10/2015	SV	1508038
200.7	Magnesium	7390		ug/L	100	1	08/10/2015	SV	1508038
200.7	Manganese	158		ug/L	2.00	1	08/10/2015	SV	1508038
200.7	Potassium	1900		ug/L	250	1	08/10/2015	SV	1508038
200.7	Sodium	10400		ug/L	250	1	08/10/2015	SV	1508038
200.7	Zinc	21.6		ug/L	10.0	1	08/10/2015	SV	1508038
200.8	Antimony	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Arsenic	< 2.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Barium	34.2		ug/L	5.00	1	08/10/2015	SV	1508039
200.8	Cadmium	0.105	J	ug/L	0.100	1	08/10/2015	SV	1508039
200.8	Chromium	1.93	J	ug/L	1.00	1	08/10/2015	SV	1508039
200.8	Cobalt	0.366		ug/L	0.100	1	08/10/2015	SV	1508039
200.8	Copper	3.68		ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Lead	0.119	J	ug/L	0.100	1	08/10/2015	SV	1508039
200.8	Molybdenum	< 1.00	U	ug/L	1.00	1	08/10/2015	SV	1508039
200.8	Nickel	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Selenium	< 2.00	U	ug/L	1.00	1	08/10/2015	SV	1508039
200.8	Silver	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Thallium	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Vanadium	< 3.00	U	ug/L	2.00	1	08/10/2015	SV	1508039
2340B	Hardness	167		mg/L	2	1	08/10/2015	SV	1508038

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

## Metals (Dissolved) by EPA 200/7000 Series Methods

Station ID: GKMSW01-080815

Date / Time Sampled: 08/08/15 10:05

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-23 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	42.7	J	ug/L	20.0	1	08/10/2015	SV	1508038
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/10/2015	SV	1508038
200.7	Calcium	53300		ug/L	100	1	08/10/2015	SV	1508038
200.7	Iron	< 250	U	ug/L	100	1	08/10/2015	SV	1508038
200.7	Magnesium	7500		ug/L	100	1	08/10/2015	SV	1508038
200.7	Manganese	102		ug/L	2.00	1	08/10/2015	SV	1508038
200.7	Potassium	1870		ug/L	250	1	08/10/2015	SV	1508038
200.7	Sodium	10500		ug/L	250	1	08/10/2015	SV	1508038
200.7	Zinc	22.8		ug/L	10.0	1	08/10/2015	SV	1508038
200.8	Antimony	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Arsenic	< 2.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Barium	41.4		ug/L	5.00	1	08/10/2015	SV	1508039
200.8	Cadmium	< 0.200	J,	ug/L	0.100	1	08/10/2015	SV	1508039
200.8	Chromium	1.55	J	ug/L	1.00	1	08/10/2015	SV	1508039
200.8	Cobalt	0.653		ug/L	0.100	1	08/10/2015	SV	1508039
200.8	Copper	1.73		ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Lead	< 0.200	U	ug/L	0.100	1	08/10/2015	SV	1508039
200.8	Molybdenum	< 1.00	U	ug/L	1.00	1	08/10/2015	SV	1508039
200.8	Nickel	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Selenium	< 2.00	U	ug/L	1.00	1	08/10/2015	SV	1508039
200.8	Silver	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Thallium	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Vanadium	< 3.00	U	ug/L	2.00	1	08/10/2015	SV	1508039
2340B	Hardness	164		mg/L	2	1	08/10/2015	SV	1508038

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

## Certificate of Analysis

TDF #: [none]

## Metals (Dissolved) by EPA 200/7000 Series Methods

Station ID: GKMSW01-080915

Date / Time Sampled: 08/09/15 12:00

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-26 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	75.6		ug/L	20.0	1	08/10/2015	SV	1508038
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/10/2015	SV	1508038
200.7	Calcium	50700		ug/L	100	1	08/10/2015	SV	1508038
200.7	Iron	< 250	U	ug/L	100	1	08/10/2015	SV	1508038
200.7	Magnesium	7270		ug/L	100	1	08/10/2015	SV	1508038
200.7	Manganese	81.8		ug/L	2.00	1	08/10/2015	SV	1508038
200.7	Potassium	1770		ug/L	250	1	08/10/2015	SV	1508038
200.7	Sodium	9760		ug/L	250	1	08/10/2015	SV	1508038
200.7	Zinc	< 20.0	U	ug/L	10.0	1	08/10/2015	SV	1508038
200.8	Antimony	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Arsenic	0.512	J	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Barium	39.4		ug/L	5.00	1	08/10/2015	SV	1508039
200.8	Cadmium	< 0.200	J,	ug/L	0.100	1	08/10/2015	SV	1508039
200.8	Chromium	3.62		ug/L	1.00	1	08/10/2015	SV	1508039
200.8	Cobalt	0.872		ug/L	0.100	1	08/10/2015	SV	1508039
200.8	Copper	2.09		ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Lead	< 0.200	U	ug/L	0.100	1	08/10/2015	SV	1508039
200.8	Molybdenum	< 1.00	U	ug/L	1.00	1	08/10/2015	SV	1508039
200.8	Nickel	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Selenium	< 2.00	U	ug/L	1.00	1	08/10/2015	SV	1508039
200.8	Silver	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Thallium	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Vanadium	< 3.00	U	ug/L	2.00	1	08/10/2015	SV	1508039
2340B	Hardness	156		mg/L	2	1	08/10/2015	SV	1508038

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

## Metals (Dissolved) by EPA 200/7000 Series Methods

Station ID: GKMSW02-080815

Date / Time Sampled: 08/08/15 12:30

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-29 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	46.3	J	ug/L	20.0	1	08/10/2015	SV	1508038
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/10/2015	SV	1508038
200.7	Calcium	35100		ug/L	100	1	08/10/2015	SV	1508038
200.7	Iron	< 250	U	ug/L	100	1	08/10/2015	SV	1508038
200.7	Magnesium	4390		ug/L	100	1	08/10/2015	SV	1508038
200.7	Manganese	443		ug/L	2.00	1	08/10/2015	SV	1508038
200.7	Potassium	700	J	ug/L	250	1	08/10/2015	SV	1508038
200.7	Sodium	2170		ug/L	250	1	08/10/2015	SV	1508038
200.7	Zinc	62.4		ug/L	10.0	1	08/10/2015	SV	1508038
200.8	Antimony	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Arsenic	< 2.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Barium	28.1		ug/L	5.00	1	08/10/2015	SV	1508039
200.8	Cadmium	0.282	J	ug/L	0.100	1	08/10/2015	SV	1508039
200.8	Chromium	< 2.00	U	ug/L	1.00	1	08/10/2015	SV	1508039
200.8	Cobalt	1.39		ug/L	0.100	1	08/10/2015	SV	1508039
200.8	Copper	2.31		ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Lead	< 0.200	U	ug/L	0.100	1	08/10/2015	SV	1508039
200.8	Molybdenum	< 1.00	U	ug/L	1.00	1	08/10/2015	SV	1508039
200.8	Nickel	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Selenium	< 2.00	U	ug/L	1.00	1	08/10/2015	SV	1508039
200.8	Silver	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Thallium	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Vanadium	< 3.00	U	ug/L	2.00	1	08/10/2015	SV	1508039
2340B	Hardness	106		mg/L	2	1	08/10/2015	SV	1508038

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

## Metals (Dissolved) by EPA 200/7000 Series Methods

Station ID: GKMSW02-080915

Date / Time Sampled: 08/09/15 11:37

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-32 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	46.8	J	ug/L	20.0	1	08/10/2015	SV	1508038
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/10/2015	SV	1508038
200.7	Calcium	35400		ug/L	100	1	08/10/2015	SV	1508038
200.7	Iron	< 250	U	ug/L	100	1	08/10/2015	SV	1508038
200.7	Magnesium	4370		ug/L	100	1	08/10/2015	SV	1508038
200.7	Manganese	403		ug/L	2.00	1	08/10/2015	SV	1508038
200.7	Potassium	785	J	ug/L	250	1	08/10/2015	SV	1508038
200.7	Sodium	2220		ug/L	250	1	08/10/2015	SV	1508038
200.7	Zinc	96.8		ug/L	10.0	1	08/10/2015	SV	1508038
200.8	Antimony	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Arsenic	< 2.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Barium	29.6		ug/L	5.00	1	08/10/2015	SV	1508039
200.8	Cadmium	0.551	J	ug/L	0.100	1	08/10/2015	SV	1508039
200.8	Chromium	1.10	J	ug/L	1.00	1	08/10/2015	SV	1508039
200.8	Cobalt	1.84		ug/L	0.100	1	08/10/2015	SV	1508039
200.8	Copper	3.90		ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Lead	< 0.200	U	ug/L	0.100	1	08/10/2015	SV	1508039
200.8	Molybdenum	< 1.00	U	ug/L	1.00	1	08/10/2015	SV	1508039
200.8	Nickel	0.507	J	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Selenium	< 2.00	U	ug/L	1.00	1	08/10/2015	SV	1508039
200.8	Silver	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Thallium	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Vanadium	< 3.00	U	ug/L	2.00	1	08/10/2015	SV	1508039
2340B	Hardness	106		mg/L	2	1	08/10/2015	SV	1508038

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

## Metals (Dissolved) by EPA 200/7000 Series Methods

Station ID: GKMSW03-080815

Date / Time Sampled: 08/08/15 14:35

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-35 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	28.3	J	ug/L	20.0	1	08/10/2015	SV	1508038
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/10/2015	SV	1508038
200.7	Calcium	50800		ug/L	100	1	08/10/2015	SV	1508038
200.7	Iron	1140		ug/L	100	1	08/10/2015	SV	1508038
200.7	Magnesium	3910		ug/L	100	1	08/10/2015	SV	1508038
200.7	Manganese	1070		ug/L	2.00	1	08/10/2015	SV	1508038
200.7	Potassium	626	J	ug/L	250	1	08/10/2015	SV	1508038
200.7	Sodium	2300		ug/L	250	1	08/10/2015	SV	1508038
200.7	Zinc	493		ug/L	10.0	1	08/10/2015	SV	1508038
200.8	Antimony	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Arsenic	< 2.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Barium	21.7		ug/L	5.00	1	08/10/2015	SV	1508039
200.8	Cadmium	1.56	J	ug/L	0.100	1	08/10/2015	SV	1508039
200.8	Chromium	< 2.00	U	ug/L	1.00	1	08/10/2015	SV	1508039
200.8	Cobalt	4.52		ug/L	0.100	1	08/10/2015	SV	1508039
200.8	Copper	10.6		ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Lead	< 0.200	U	ug/L	0.100	1	08/10/2015	SV	1508039
200.8	Molybdenum	< 1.00	U	ug/L	1.00	1	08/10/2015	SV	1508039
200.8	Nickel	1.60		ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Selenium	< 2.00	U	ug/L	1.00	1	08/10/2015	SV	1508039
200.8	Silver	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Thallium	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Vanadium	< 3.00	U	ug/L	2.00	1	08/10/2015	SV	1508039
2340B	Hardness	143		mg/L	2	1	08/10/2015	SV	1508038

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

## Metals (Dissolved) by EPA 200/7000 Series Methods

Station ID: GKMSW03-080915

Date / Time Sampled: 08/09/15 13:27

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-38 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	23.1	J	ug/L	20.0	1	08/10/2015	SV	1508038
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/10/2015	SV	1508038
200.7	Calcium	53300		ug/L	100	1	08/10/2015	SV	1508038
200.7	Iron	1330		ug/L	100	1	08/10/2015	SV	1508038
200.7	Magnesium	4070		ug/L	100	1	08/10/2015	SV	1508038
200.7	Manganese	1110		ug/L	2.00	1	08/10/2015	SV	1508038
200.7	Potassium	761	J	ug/L	250	1	08/10/2015	SV	1508038
200.7	Sodium	2470		ug/L	250	1	08/10/2015	SV	1508038
200.7	Zinc	529		ug/L	10.0	1	08/10/2015	SV	1508038
200.8	Antimony	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Arsenic	< 2.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Barium	21.1		ug/L	5.00	1	08/10/2015	SV	1508039
200.8	Cadmium	1.69	J	ug/L	0.100	1	08/10/2015	SV	1508039
200.8	Chromium	< 2.00	U	ug/L	1.00	1	08/10/2015	SV	1508039
200.8	Cobalt	4.94		ug/L	0.100	1	08/10/2015	SV	1508039
200.8	Copper	16.8		ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Lead	< 0.200	U	ug/L	0.100	1	08/10/2015	SV	1508039
200.8	Molybdenum	< 1.00	U	ug/L	1.00	1	08/10/2015	SV	1508039
200.8	Nickel	1.62		ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Selenium	< 2.00	U	ug/L	1.00	1	08/10/2015	SV	1508039
200.8	Silver	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Thallium	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508039
200.8	Vanadium	< 3.00	U	ug/L	2.00	1	08/10/2015	SV	1508039
2340B	Hardness	150		mg/L	2	1	08/10/2015	SV	1508038



Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

## Metals (Dissolved) by EPA 200/7000 Series Methods

Station ID: GKMSW04-080815

Date / Time Sampled: 08/08/15 11:10

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-41 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	< 50.0	U	ug/L	20.0	1	08/10/2015	SV	1508041
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/10/2015	SV	1508041
200.7	Calcium	52000		ug/L	100	1	08/10/2015	SV	1508041
200.7	Iron	< 250	U	ug/L	100	1	08/10/2015	SV	1508041
200.7	Magnesium	6990		ug/L	100	1	08/10/2015	SV	1508041
200.7	Manganese	146		ug/L	2.00	1	08/10/2015	SV	1508041
200.7	Potassium	1800		ug/L	250	1	08/10/2015	SV	1508041
200.7	Sodium	10000		ug/L	250	1	08/10/2015	SV	1508041
200.7	Zinc	66.0		ug/L	10.0	1	08/10/2015	SV	1508041
200.8	Antimony	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508042
200.8	Arsenic	< 2.00	U	ug/L	0.500	1	08/10/2015	SV	1508042
200.8	Barium	40.5		ug/L	5.00	1	08/10/2015	SV	1508042
200.8	Cadmium	0.232	J	ug/L	0.100	1	08/10/2015	SV	1508042
200.8	Chromium	1.57	J	ug/L	1.00	1	08/10/2015	SV	1508042
200.8	Cobalt	1.58		ug/L	0.100	1	08/10/2015	SV	1508042
200.8	Copper	1.93		ug/L	0.500	1	08/10/2015	SV	1508042
200.8	Lead	< 0.200	U	ug/L	0.100	1	08/10/2015	SV	1508042
200.8	Molybdenum	< 1.00	U	ug/L	1.00	1	08/10/2015	SV	1508042
200.8	Nickel	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508042
200.8	Selenium	< 2.00	U	ug/L	1.00	1	08/10/2015	SV	1508042
200.8	Silver	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508042
200.8	Thallium	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508042
200.8	Vanadium	< 3.00	U	ug/L	2.00	1	08/10/2015	SV	1508042
2340B	Hardness	159		mg/L	2	1	08/10/2015	SV	1508041

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

## Metals (Dissolved) by EPA 200/7000 Series Methods

Station ID: GKMSW04-080915

Date / Time Sampled: 08/09/15 12:45

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-44 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	27.1	J	ug/L	20.0	1	08/10/2015	SV	1508041
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/10/2015	SV	1508041
200.7	Calcium	49100		ug/L	100	1	08/10/2015	SV	1508041
200.7	Iron	< 250	U	ug/L	100	1	08/10/2015	SV	1508041
200.7	Magnesium	6810		ug/L	100	1	08/10/2015	SV	1508041
200.7	Manganese	141		ug/L	2.00	1	08/10/2015	SV	1508041
200.7	Potassium	1730		ug/L	250	1	08/10/2015	SV	1508041
200.7	Sodium	9460		ug/L	250	1	08/10/2015	SV	1508041
200.7	Zinc	51.7		ug/L	10.0	1	08/10/2015	SV	1508041
200.8	Antimony	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508042
200.8	Arsenic	< 2.00	U	ug/L	0.500	1	08/10/2015	SV	1508042
200.8	Barium	39.6		ug/L	5.00	1	08/10/2015	SV	1508042
200.8	Cadmium	0.261	J	ug/L	0.100	1	08/10/2015	SV	1508042
200.8	Chromium	2.87		ug/L	1.00	1	08/10/2015	SV	1508042
200.8	Cobalt	0.945		ug/L	0.100	1	08/10/2015	SV	1508042
200.8	Copper	1.99		ug/L	0.500	1	08/10/2015	SV	1508042
200.8	Lead	< 0.200	U	ug/L	0.100	1	08/10/2015	SV	1508042
200.8	Molybdenum	< 1.00	U	ug/L	1.00	1	08/10/2015	SV	1508042
200.8	Nickel	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508042
200.8	Selenium	< 2.00	U	ug/L	1.00	1	08/10/2015	SV	1508042
200.8	Silver	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508042
200.8	Thallium	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508042
200.8	Vanadium	< 3.00	U	ug/L	2.00	1	08/10/2015	SV	1508042
2340B	Hardness	151		mg/L	2	1	08/10/2015	SV	1508041

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

## Metals (Dissolved) by EPA 200/7000 Series Methods

Station ID: GKMSW05-080815

Date / Time Sampled: 08/08/15 11:50

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-47 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	30.7	J	ug/L	20.0	1	08/10/2015	SV	1508041
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/10/2015	SV	1508041
200.7	Calcium	52300		ug/L	100	1	08/10/2015	SV	1508041
200.7	Iron	< 250	U	ug/L	100	1	08/10/2015	SV	1508041
200.7	Magnesium	7220		ug/L	100	1	08/10/2015	SV	1508041
200.7	Manganese	128		ug/L	2.00	1	08/10/2015	SV	1508041
200.7	Potassium	1840		ug/L	250	1	08/10/2015	SV	1508041
200.7	Sodium	10100		ug/L	250	1	08/10/2015	SV	1508041
200.7	Zinc	39.7		ug/L	10.0	1	08/10/2015	SV	1508041
200.8	Antimony	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508042
200.8	Arsenic	< 2.00	U	ug/L	0.500	1	08/10/2015	SV	1508042
200.8	Barium	41.4		ug/L	5.00	1	08/10/2015	SV	1508042
200.8	Cadmium	0.153	J	ug/L	0.100	1	08/10/2015	SV	1508042
200.8	Chromium	1.68	J	ug/L	1.00	1	08/10/2015	SV	1508042
200.8	Cobalt	0.581		ug/L	0.100	1	08/10/2015	SV	1508042
200.8	Copper	1.81		ug/L	0.500	1	08/10/2015	SV	1508042
200.8	Lead	< 0.200	U	ug/L	0.100	1	08/10/2015	SV	1508042
200.8	Molybdenum	< 1.00	U	ug/L	1.00	1	08/10/2015	SV	1508042
200.8	Nickel	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508042
200.8	Selenium	< 2.00	U	ug/L	1.00	1	08/10/2015	SV	1508042
200.8	Silver	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508042
200.8	Thallium	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508042
200.8	Vanadium	< 3.00	U	ug/L	2.00	1	08/10/2015	SV	1508042
2340B	Hardness	160		mg/L	2	1	08/10/2015	SV	1508041

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

## Metals (Dissolved) by EPA 200/7000 Series Methods

Station ID: GKMSW05-080915

Date / Time Sampled: 08/09/15 12:25

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-50 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	41.6	J	ug/L	20.0	1	08/10/2015	SV	1508041
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/10/2015	SV	1508041
200.7	Calcium	50000		ug/L	100	1	08/10/2015	SV	1508041
200.7	Iron	< 250	U	ug/L	100	1	08/10/2015	SV	1508041
200.7	Magnesium	6940		ug/L	100	1	08/10/2015	SV	1508041
200.7	Manganese	119		ug/L	2.00	1	08/10/2015	SV	1508041
200.7	Potassium	1710		ug/L	250	1	08/10/2015	SV	1508041
200.7	Sodium	9440		ug/L	250	1	08/10/2015	SV	1508041
200.7	Zinc	25.6		ug/L	10.0	1	08/10/2015	SV	1508041
200.8	Antimony	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508042
200.8	Arsenic	< 2.00	U	ug/L	0.500	1	08/10/2015	SV	1508042
200.8	Barium	39.8		ug/L	5.00	1	08/10/2015	SV	1508042
200.8	Cadmium	0.116	J	ug/L	0.100	1	08/10/2015	SV	1508042
200.8	Chromium	2.69		ug/L	1.00	1	08/10/2015	SV	1508042
200.8	Cobalt	0.819		ug/L	0.100	1	08/10/2015	SV	1508042
200.8	Copper	1.97		ug/L	0.500	1	08/10/2015	SV	1508042
200.8	Lead	< 0.200	U	ug/L	0.100	1	08/10/2015	SV	1508042
200.8	Molybdenum	< 1.00	U	ug/L	1.00	1	08/10/2015	SV	1508042
200.8	Nickel	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508042
200.8	Selenium	< 2.00	U	ug/L	1.00	1	08/10/2015	SV	1508042
200.8	Silver	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508042
200.8	Thallium	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508042
200.8	Vanadium	< 3.00	U	ug/L	2.00	1	08/10/2015	SV	1508042
2340B	Hardness	153		mg/L	2	1	08/10/2015	SV	1508041

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

## Metals (Dissolved) by EPA 200/7000 Series Methods

Station ID: GKMSW06-080815

Date / Time Sampled: 08/08/15 00:00

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-53 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	45.0	J	ug/L	20.0	1	08/10/2015	SV	1508041
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/10/2015	SV	1508041
200.7	Calcium	35200		ug/L	100	1	08/10/2015	SV	1508041
200.7	Iron	< 250	U	ug/L	100	1	08/10/2015	SV	1508041
200.7	Magnesium	4380		ug/L	100	1	08/10/2015	SV	1508041
200.7	Manganese	444		ug/L	2.00	1	08/10/2015	SV	1508041
200.7	Potassium	687	J	ug/L	250	1	08/10/2015	SV	1508041
200.7	Sodium	2170		ug/L	250	1	08/10/2015	SV	1508041
200.7	Zinc	61.5		ug/L	10.0	1	08/10/2015	SV	1508041
200.8	Antimony	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508042
200.8	Arsenic	< 2.00	U	ug/L	0.500	1	08/10/2015	SV	1508042
200.8	Barium	28.3		ug/L	5.00	1	08/10/2015	SV	1508042
200.8	Cadmium	0.344	J	ug/L	0.100	1	08/10/2015	SV	1508042
200.8	Chromium	< 2.00	U	ug/L	1.00	1	08/10/2015	SV	1508042
200.8	Cobalt	1.73		ug/L	0.100	1	08/10/2015	SV	1508042
200.8	Copper	2.44		ug/L	0.500	1	08/10/2015	SV	1508042
200.8	Lead	< 0.200	U	ug/L	0.100	1	08/10/2015	SV	1508042
200.8	Molybdenum	< 1.00	U	ug/L	1.00	1	08/10/2015	SV	1508042
200.8	Nickel	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508042
200.8	Selenium	< 2.00	U	ug/L	1.00	1	08/10/2015	SV	1508042
200.8	Silver	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508042
200.8	Thallium	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508042
200.8	Vanadium	< 3.00	U	ug/L	2.00	1	08/10/2015	SV	1508042
2340B	Hardness	106		mg/L	2	1	08/10/2015	SV	1508041

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

## Metals (Dissolved) by EPA 200/7000 Series Methods

Station ID: GKMSW07-080815

Date / Time Sampled: 08/08/15 13:50

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-56 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	6940		ug/L	20.0	1	08/10/2015	SV	1508041
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/10/2015	SV	1508041
200.7	Calcium	139000		ug/L	100	1	08/10/2015	SV	1508041
200.7	Iron	14700		ug/L	100	1	08/10/2015	SV	1508041
200.7	Magnesium	9440		ug/L	100	1	08/10/2015	SV	1508041
200.7	Manganese	5460		ug/L	2.00	1	08/10/2015	SV	1508041
200.7	Potassium	1340		ug/L	250	1	08/10/2015	SV	1508041
200.7	Sodium	3620		ug/L	250	1	08/10/2015	SV	1508041
200.7	Zinc	3370		ug/L	10.0	1	08/10/2015	SV	1508041
200.8	Antimony	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508042
200.8	Arsenic	< 10.0	U	ug/L	2.50	5	08/10/2015	SV	1508042
200.8	Barium	< 50.0	U	ug/L	25.0	5	08/10/2015	SV	1508042
200.8	Cadmium	10.7	J	ug/L	0.500	5	08/10/2015	SV	1508042
200.8	Chromium	< 10.0	U	ug/L	5.00	5	08/10/2015	SV	1508042
200.8	Cobalt	24.2		ug/L	0.500	5	08/10/2015	SV	1508042
200.8	Copper	437		ug/L	2.50	5	08/10/2015	SV	1508042
200.8	Lead	27.6		ug/L	0.500	5	08/10/2015	SV	1508042
200.8	Molybdenum	< 5.00	U	ug/L	5.00	5	08/10/2015	SV	1508042
200.8	Nickel	11.7		ug/L	2.50	5	08/10/2015	SV	1508042
200.8	Selenium	< 10.0	U	ug/L	5.00	5	08/10/2015	SV	1508042
200.8	Silver	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508042
200.8	Thallium	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508042
200.8	Vanadium	< 15.0	U	ug/L	10.0	5	08/10/2015	SV	1508042
2340B	Hardness	386		mg/L	2	1	08/10/2015	SV	1508041

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

## Metals (Dissolved) by EPA 200/7000 Series Methods

Station ID: GKMSW08-080815

Date / Time Sampled: 08/08/15 14:10

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-59 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	67.1		ug/L	20.0	1	08/10/2015	SV	1508041
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/10/2015	SV	1508041
200.7	Calcium	37800		ug/L	100	1	08/10/2015	SV	1508041
200.7	Iron	< 250	U	ug/L	100	1	08/10/2015	SV	1508041
200.7	Magnesium	2590		ug/L	100	1	08/10/2015	SV	1508041
200.7	Manganese	816		ug/L	2.00	1	08/10/2015	SV	1508041
200.7	Potassium	530	J	ug/L	250	1	08/10/2015	SV	1508041
200.7	Sodium	1720		ug/L	250	1	08/10/2015	SV	1508041
200.7	Zinc	224		ug/L	10.0	1	08/10/2015	SV	1508041
200.8	Antimony	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508042
200.8	Arsenic	< 2.00	U	ug/L	0.500	1	08/10/2015	SV	1508042
200.8	Barium	20.3		ug/L	5.00	1	08/10/2015	SV	1508042
200.8	Cadmium	0.708	J	ug/L	0.100	1	08/10/2015	SV	1508042
200.8	Chromium	< 2.00	U	ug/L	1.00	1	08/10/2015	SV	1508042
200.8	Cobalt	0.775		ug/L	0.100	1	08/10/2015	SV	1508042
200.8	Copper	3.12		ug/L	0.500	1	08/10/2015	SV	1508042
200.8	Lead	< 0.200	U	ug/L	0.100	1	08/10/2015	SV	1508042
200.8	Molybdenum	1.52		ug/L	1.00	1	08/10/2015	SV	1508042
200.8	Nickel	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508042
200.8	Selenium	< 2.00	U	ug/L	1.00	1	08/10/2015	SV	1508042
200.8	Silver	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508042
200.8	Thallium	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508042
200.8	Vanadium	< 3.00	U	ug/L	2.00	1	08/10/2015	SV	1508042
2340B	Hardness	105		mg/L	2	1	08/10/2015	SV	1508041

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

## Certificate of Analysis

TDF #: [none]

## Metals (Dissolved) by EPA 200/7000 Series Methods

Station ID: GKMSW08-080915

Date / Time Sampled: 08/09/15 13:00

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-62 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	57.7		ug/L	20.0	1	08/10/2015	SV	1508041
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/10/2015	SV	1508041
200.7	Calcium	39300		ug/L	100	1	08/10/2015	SV	1508041
200.7	Iron	< 250	U	ug/L	100	1	08/10/2015	SV	1508041
200.7	Magnesium	2680		ug/L	100	1	08/10/2015	SV	1508041
200.7	Manganese	784		ug/L	2.00	1	08/10/2015	SV	1508041
200.7	Potassium	525	J	ug/L	250	1	08/10/2015	SV	1508041
200.7	Sodium	1770		ug/L	250	1	08/10/2015	SV	1508041
200.7	Zinc	225		ug/L	10.0	1	08/10/2015	SV	1508041
200.8	Antimony	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508042
200.8	Arsenic	< 2.00	U	ug/L	0.500	1	08/10/2015	SV	1508042
200.8	Barium	20.7		ug/L	5.00	1	08/10/2015	SV	1508042
200.8	Cadmium	0.881	J	ug/L	0.100	1	08/10/2015	SV	1508042
200.8	Chromium	< 2.00	U	ug/L	1.00	1	08/10/2015	SV	1508042
200.8	Cobalt	0.761		ug/L	0.100	1	08/10/2015	SV	1508042
200.8	Copper	3.20		ug/L	0.500	1	08/10/2015	SV	1508042
200.8	Lead	< 0.200	U	ug/L	0.100	1	08/10/2015	SV	1508042
200.8	Molybdenum	1.52		ug/L	1.00	1	08/10/2015	SV	1508042
200.8	Nickel	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508042
200.8	Selenium	< 2.00	U	ug/L	1.00	1	08/10/2015	SV	1508042
200.8	Silver	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508042
200.8	Thallium	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508042
200.8	Vanadium	< 3.00	U	ug/L	2.00	1	08/10/2015	SV	1508042
2340B	Hardness	109		mg/L	2	1	08/10/2015	SV	1508041



Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

## Metals (Dissolved) by EPA 200/7000 Series Methods

Station ID: GKMSW12-080915

Date / Time Sampled: 08/09/15 14:00

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-65 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	32.9	J	ug/L	20.0	1	08/10/2015	SV	1508041
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/10/2015	SV	1508041
200.7	Calcium	50100		ug/L	100	1	08/10/2015	SV	1508041
200.7	Iron	< 250	U	ug/L	100	1	08/10/2015	SV	1508041
200.7	Magnesium	6930		ug/L	100	1	08/10/2015	SV	1508041
200.7	Manganese	144		ug/L	2.00	1	08/10/2015	SV	1508041
200.7	Potassium	1750		ug/L	250	1	08/10/2015	SV	1508041
200.7	Sodium	9670		ug/L	250	1	08/10/2015	SV	1508041
200.7	Zinc	49.7		ug/L	10.0	1	08/10/2015	SV	1508041
200.8	Antimony	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508042
200.8	Arsenic	< 2.00	U	ug/L	0.500	1	08/10/2015	SV	1508042
200.8	Barium	40.8		ug/L	5.00	1	08/10/2015	SV	1508042
200.8	Cadmium	0.208	J	ug/L	0.100	1	08/10/2015	SV	1508042
200.8	Chromium	2.20		ug/L	1.00	1	08/10/2015	SV	1508042
200.8	Cobalt	0.896		ug/L	0.100	1	08/10/2015	SV	1508042
200.8	Copper	1.96		ug/L	0.500	1	08/10/2015	SV	1508042
200.8	Lead	< 0.200	U	ug/L	0.100	1	08/10/2015	SV	1508042
200.8	Molybdenum	< 1.00	U	ug/L	1.00	1	08/10/2015	SV	1508042
200.8	Nickel	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508042
200.8	Selenium	< 2.00	U	ug/L	1.00	1	08/10/2015	SV	1508042
200.8	Silver	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508042
200.8	Thallium	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508042
200.8	Vanadium	< 3.00	U	ug/L	2.00	1	08/10/2015	SV	1508042
2340B	Hardness	154		mg/L	2	1	08/10/2015	SV	1508041

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

## Metals (Dissolved) by EPA 200/7000 Series Methods

Station ID: GKMTB01-080815

Date / Time Sampled: 08/08/15 00:00

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-68 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	< 50.0	U	ug/L	20.0	1	08/10/2015	SV	1508041
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/10/2015	SV	1508041
200.7	Calcium	< 250	U	ug/L	100	1	08/10/2015	SV	1508041
200.7	Iron	< 250	U	ug/L	100	1	08/10/2015	SV	1508041
200.7	Magnesium	< 250	U	ug/L	100	1	08/10/2015	SV	1508041
200.7	Manganese	< 5.00	U	ug/L	2.00	1	08/10/2015	SV	1508041
200.7	Potassium	< 1000	U	ug/L	250	1	08/10/2015	SV	1508041
200.7	Sodium	< 1000	U	ug/L	250	1	08/10/2015	SV	1508041
200.7	<b>Zinc</b>	<b>14.0</b>	J	ug/L	10.0	1	08/10/2015	SV	1508041
200.8	Antimony	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508042
200.8	Arsenic	< 2.00	U	ug/L	0.500	1	08/10/2015	SV	1508042
200.8	Barium	< 10.0	U	ug/L	5.00	1	08/10/2015	SV	1508042
200.8	Cadmium	< 0.200	J,	ug/L	0.100	1	08/10/2015	SV	1508042
200.8	Chromium	< 2.00	U	ug/L	1.00	1	08/10/2015	SV	1508042
200.8	Cobalt	< 0.200	U	ug/L	0.100	1	08/10/2015	SV	1508042
200.8	Copper	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508042
200.8	Lead	< 0.200	U	ug/L	0.100	1	08/10/2015	SV	1508042
200.8	Molybdenum	< 1.00	U	ug/L	1.00	1	08/10/2015	SV	1508042
200.8	Nickel	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508042
200.8	Selenium	< 2.00	U	ug/L	1.00	1	08/10/2015	SV	1508042
200.8	Silver	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508042
200.8	Thallium	< 1.00	U	ug/L	0.500	1	08/10/2015	SV	1508042
200.8	Vanadium	< 3.00	U	ug/L	2.00	1	08/10/2015	SV	1508042
2340B	Hardness	< 2		mg/L	2	1	08/10/2015	SV	1508041

"J" Qualifier indicates an estimated value

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

## Certificate of Analysis

TDF #: [none]

## Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID: AMIMAS-ROTARY PARK-0000

Date / Time Sampled: 08/07/15 00:00

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-01 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	9210		ug/L	20.0	1	08/10/2015	SV	1508043
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/10/2015	SV	1508043
200.7	Calcium	65300		ug/L	100	1	08/10/2015	SV	1508043
200.7	Iron	93500		ug/L	100	1	08/10/2015	SV	1508043
200.7	Magnesium	10400		ug/L	100	1	08/10/2015	SV	1508043
200.7	Manganese	998		ug/L	2.00	1	08/10/2015	SV	1508043
200.7	Potassium	4740		ug/L	250	1	08/10/2015	SV	1508043
200.7	Sodium	10900		ug/L	250	1	08/10/2015	SV	1508043
200.7	Zinc	750		ug/L	10.0	1	08/10/2015	SV	1508043
200.8	Antimony	10.9		ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Arsenic	72.2		ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Barium	208		ug/L	25.0	5	08/10/2015	SV	1508043
200.8	Cadmium	2.35		ug/L	0.500	5	08/10/2015	SV	1508043
200.8	Chromium	6.76	J	ug/L	5.00	5	08/10/2015	SV	1508043
200.8	Cobalt	3.70		ug/L	0.500	5	08/10/2015	SV	1508043
200.8	Copper	278		ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Lead	2000		ug/L	0.500	5	08/10/2015	SV	1508043
200.8	Molybdenum	20.2		ug/L	5.00	5	08/10/2015	SV	1508043
200.8	Nickel	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Selenium	6.91	J	ug/L	5.00	5	08/10/2015	SV	1508043
200.8	Silver	13.6		ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Thallium	11.6		ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Vanadium	52.2		ug/L	10.0	5	08/10/2015	SV	1508043

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

## Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID: AMIMAS-ROTARY PARK-0030

Date / Time Sampled: 08/07/15 00:30

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-04 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	12300		ug/L	20.0	1	08/10/2015	SV	1508043
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/10/2015	SV	1508043
200.7	Calcium	66600		ug/L	100	1	08/10/2015	SV	1508043
200.7	Iron	121000		ug/L	100	1	08/10/2015	SV	1508043
200.7	Magnesium	11100		ug/L	100	1	08/10/2015	SV	1508043
200.7	Manganese	1330		ug/L	2.00	1	08/10/2015	SV	1508043
200.7	Potassium	5410		ug/L	250	1	08/10/2015	SV	1508043
200.7	Sodium	10600		ug/L	250	1	08/10/2015	SV	1508043
200.7	Zinc	980		ug/L	10.0	1	08/10/2015	SV	1508043
200.8	Antimony	10.3		ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Arsenic	87.5		ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Barium	207		ug/L	25.0	5	08/10/2015	SV	1508043
200.8	Cadmium	2.85		ug/L	0.500	5	08/10/2015	SV	1508043
200.8	Chromium	7.85	J	ug/L	5.00	5	08/10/2015	SV	1508043
200.8	Cobalt	5.12		ug/L	0.500	5	08/10/2015	SV	1508043
200.8	Copper	395		ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Lead	2620		ug/L	0.500	5	08/10/2015	SV	1508043
200.8	Molybdenum	25.8		ug/L	5.00	5	08/10/2015	SV	1508043
200.8	Nickel	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Selenium	6.67	J	ug/L	5.00	5	08/10/2015	SV	1508043
200.8	Silver	16.3		ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Thallium	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Vanadium	60.8		ug/L	10.0	5	08/10/2015	SV	1508043

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

## Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID: AMIMAS-ROTARY PARK-1000

Date / Time Sampled: 08/07/15 10:00

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-07 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	3000		ug/L	20.0	1	08/10/2015	SV	1508043
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/10/2015	SV	1508043
200.7	Calcium	53500		ug/L	100	1	08/10/2015	SV	1508043
200.7	Iron	14300		ug/L	100	1	08/10/2015	SV	1508043
200.7	Magnesium	7590		ug/L	100	1	08/10/2015	SV	1508043
200.7	Manganese	245		ug/L	2.00	1	08/10/2015	SV	1508043
200.7	Potassium	2760		ug/L	250	1	08/10/2015	SV	1508043
200.7	Sodium	10100		ug/L	250	1	08/10/2015	SV	1508043
200.7	Zinc	226		ug/L	10.0	1	08/10/2015	SV	1508043
200.8	Antimony	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Arsenic	12.6		ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Barium	60.7		ug/L	25.0	5	08/10/2015	SV	1508043
200.8	Cadmium	1.12		ug/L	0.500	5	08/10/2015	SV	1508043
200.8	Chromium	< 10.0	U	ug/L	5.00	5	08/10/2015	SV	1508043
200.8	Cobalt	0.868	J	ug/L	0.500	5	08/10/2015	SV	1508043
200.8	Copper	57.0		ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Lead	192		ug/L	0.500	5	08/10/2015	SV	1508043
200.8	Molybdenum	< 5.00	U	ug/L	5.00	5	08/10/2015	SV	1508043
200.8	Nickel	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Selenium	< 10.0	U	ug/L	5.00	5	08/10/2015	SV	1508043
200.8	Silver	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Thallium	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Vanadium	< 15.0	U	ug/L	10.0	5	08/10/2015	SV	1508043

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

## Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID: AMIMAS-ROTARY PARK-2005

Date / Time Sampled: 08/06/15 20:05

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-10 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	122		ug/L	20.0	1	08/10/2015	SV	1508043
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/10/2015	SV	1508043
200.7	Calcium	53100		ug/L	100	1	08/10/2015	SV	1508043
200.7	Iron	152	J	ug/L	100	1	08/10/2015	SV	1508043
200.7	Magnesium	7210		ug/L	100	1	08/10/2015	SV	1508043
200.7	Manganese	90.1		ug/L	2.00	1	08/10/2015	SV	1508043
200.7	Potassium	1920		ug/L	250	1	08/10/2015	SV	1508043
200.7	Sodium	10600		ug/L	250	1	08/10/2015	SV	1508043
200.7	Zinc	58.0		ug/L	10.0	1	08/10/2015	SV	1508043
200.8	Antimony	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Arsenic	< 10.0	U	ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Barium	43.4	J	ug/L	25.0	5	08/10/2015	SV	1508043
200.8	Cadmium	< 1.00	U	ug/L	0.500	5	08/10/2015	SV	1508043
200.8	Chromium	< 10.0	U	ug/L	5.00	5	08/10/2015	SV	1508043
200.8	Cobalt	< 1.00	U	ug/L	0.500	5	08/10/2015	SV	1508043
200.8	Copper	2.53	J	ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Lead	1.49		ug/L	0.500	5	08/10/2015	SV	1508043
200.8	Molybdenum	< 5.00	U	ug/L	5.00	5	08/10/2015	SV	1508043
200.8	Nickel	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Selenium	< 10.0	U	ug/L	5.00	5	08/10/2015	SV	1508043
200.8	Silver	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Thallium	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Vanadium	< 15.0	U	ug/L	10.0	5	08/10/2015	SV	1508043

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

## Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID: AMIMAS-ROTARY PARK-2108

Date / Time Sampled: 08/06/15 21:08

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-13 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	119		ug/L	20.0	1	08/10/2015	SV	1508043
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/10/2015	SV	1508043
200.7	Calcium	52900		ug/L	100	1	08/10/2015	SV	1508043
200.7	Iron	163	J	ug/L	100	1	08/10/2015	SV	1508043
200.7	Magnesium	7170		ug/L	100	1	08/10/2015	SV	1508043
200.7	Manganese	92.4		ug/L	2.00	1	08/10/2015	SV	1508043
200.7	Potassium	1910		ug/L	250	1	08/10/2015	SV	1508043
200.7	Sodium	10500		ug/L	250	1	08/10/2015	SV	1508043
200.7	Zinc	61.2		ug/L	10.0	1	08/10/2015	SV	1508043
200.8	Antimony	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Arsenic	< 10.0	U	ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Barium	45.1	J	ug/L	25.0	5	08/10/2015	SV	1508043
200.8	Cadmium	< 1.00	U	ug/L	0.500	5	08/10/2015	SV	1508043
200.8	Chromium	< 10.0	U	ug/L	5.00	5	08/10/2015	SV	1508043
200.8	Cobalt	< 1.00	U	ug/L	0.500	5	08/10/2015	SV	1508043
200.8	Copper	2.57	J	ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Lead	1.41		ug/L	0.500	5	08/10/2015	SV	1508043
200.8	Molybdenum	< 5.00	U	ug/L	5.00	5	08/10/2015	SV	1508043
200.8	Nickel	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Selenium	< 10.0	U	ug/L	5.00	5	08/10/2015	SV	1508043
200.8	Silver	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Thallium	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Vanadium	< 15.0	U	ug/L	10.0	5	08/10/2015	SV	1508043

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

## Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID: AMIMAS-ROTARY PARK-2200

Date / Time Sampled: 08/06/15 22:00

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-16 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	227		ug/L	20.0	1	08/10/2015	SV	1508043
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/10/2015	SV	1508043
200.7	Calcium	54100		ug/L	100	1	08/10/2015	SV	1508043
200.7	Iron	670		ug/L	100	1	08/10/2015	SV	1508043
200.7	Magnesium	7310		ug/L	100	1	08/10/2015	SV	1508043
200.7	Manganese	108		ug/L	2.00	1	08/10/2015	SV	1508043
200.7	Potassium	1970		ug/L	250	1	08/10/2015	SV	1508043
200.7	Sodium	10600		ug/L	250	1	08/10/2015	SV	1508043
200.7	Zinc	66.8		ug/L	10.0	1	08/10/2015	SV	1508043
200.8	Antimony	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Arsenic	< 10.0	U	ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Barium	46.0	J	ug/L	25.0	5	08/10/2015	SV	1508043
200.8	Cadmium	< 1.00	U	ug/L	0.500	5	08/10/2015	SV	1508043
200.8	Chromium	< 10.0	U	ug/L	5.00	5	08/10/2015	SV	1508043
200.8	Cobalt	< 1.00	U	ug/L	0.500	5	08/10/2015	SV	1508043
200.8	Copper	3.65	J	ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Lead	10.1		ug/L	0.500	5	08/10/2015	SV	1508043
200.8	Molybdenum	< 5.00	U	ug/L	5.00	5	08/10/2015	SV	1508043
200.8	Nickel	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Selenium	< 10.0	U	ug/L	5.00	5	08/10/2015	SV	1508043
200.8	Silver	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Thallium	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Vanadium	< 15.0	U	ug/L	10.0	5	08/10/2015	SV	1508043



Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

## Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID: AMIMAS-ROTARY PARK-2300

Date / Time Sampled: 08/06/15 23:00

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-19 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	5530		ug/L	20.0	1	08/10/2015	SV	1508043
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/10/2015	SV	1508043
200.7	Calcium	57300		ug/L	100	1	08/10/2015	SV	1508043
200.7	Iron	23200		ug/L	100	1	08/10/2015	SV	1508043
200.7	Magnesium	8250		ug/L	100	1	08/10/2015	SV	1508043
200.7	Manganese	341		ug/L	2.00	1	08/10/2015	SV	1508043
200.7	Potassium	4150		ug/L	250	1	08/10/2015	SV	1508043
200.7	Sodium	10600		ug/L	250	1	08/10/2015	SV	1508043
200.7	Zinc	244		ug/L	10.0	1	08/10/2015	SV	1508043
200.8	Antimony	3.07	J	ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Arsenic	14.7		ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Barium	92.5		ug/L	25.0	5	08/10/2015	SV	1508043
200.8	Cadmium	0.603	J	ug/L	0.500	5	08/10/2015	SV	1508043
200.8	Chromium	< 10.0	U	ug/L	5.00	5	08/10/2015	SV	1508043
200.8	Cobalt	1.05		ug/L	0.500	5	08/10/2015	SV	1508043
200.8	Copper	69.5		ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Lead	470		ug/L	0.500	5	08/10/2015	SV	1508043
200.8	Molybdenum	5.14		ug/L	5.00	5	08/10/2015	SV	1508043
200.8	Nickel	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Selenium	< 10.0	U	ug/L	5.00	5	08/10/2015	SV	1508043
200.8	Silver	3.06	J	ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Thallium	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Vanadium	14.6	J	ug/L	10.0	5	08/10/2015	SV	1508043

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

## Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID: GKMSW01-080815

Date / Time Sampled: 08/08/15 10:05

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-22 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	811		ug/L	20.0	1	08/10/2015	SV	1508043
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/10/2015	SV	1508043
200.7	Calcium	55200		ug/L	100	1	08/10/2015	SV	1508043
200.7	Iron	2930		ug/L	100	1	08/10/2015	SV	1508043
200.7	Magnesium	7940		ug/L	100	1	08/10/2015	SV	1508043
200.7	Manganese	151		ug/L	2.00	1	08/10/2015	SV	1508043
200.7	Potassium	2260		ug/L	250	1	08/10/2015	SV	1508043
200.7	Sodium	10900		ug/L	250	1	08/10/2015	SV	1508043
200.7	Zinc	91.5		ug/L	10.0	1	08/10/2015	SV	1508043
200.8	Antimony	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Arsenic	< 10.0	U	ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Barium	47.9	J	ug/L	25.0	5	08/10/2015	SV	1508043
200.8	Cadmium	< 1.00	U	ug/L	0.500	5	08/10/2015	SV	1508043
200.8	Chromium	< 10.0	U	ug/L	5.00	5	08/10/2015	SV	1508043
200.8	Cobalt	< 1.00	U	ug/L	0.500	5	08/10/2015	SV	1508043
200.8	Copper	13.8		ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Lead	34.1	J	ug/L	0.500	5	08/10/2015	SV	1508043
200.8	Molybdenum	< 5.00	U	ug/L	5.00	5	08/10/2015	SV	1508043
200.8	Nickel	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Selenium	< 10.0	U	ug/L	5.00	5	08/10/2015	SV	1508043
200.8	Silver	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Thallium	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Vanadium	< 15.0	U	ug/L	10.0	5	08/10/2015	SV	1508043

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

## Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID: GKMSW01-080915

Date / Time Sampled: 08/09/15 12:00

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-25 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	497		ug/L	20.0	1	08/10/2015	SV	1508043
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/10/2015	SV	1508043
200.7	Calcium	51600		ug/L	100	1	08/10/2015	SV	1508043
200.7	Iron	1410		ug/L	100	1	08/10/2015	SV	1508043
200.7	Magnesium	7360		ug/L	100	1	08/10/2015	SV	1508043
200.7	Manganese	121		ug/L	2.00	1	08/10/2015	SV	1508043
200.7	Potassium	1940		ug/L	250	1	08/10/2015	SV	1508043
200.7	Sodium	9930		ug/L	250	1	08/10/2015	SV	1508043
200.7	Zinc	66.8		ug/L	10.0	1	08/10/2015	SV	1508043
200.8	Antimony	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Arsenic	2.68	J	ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Barium	43.3	J	ug/L	25.0	5	08/10/2015	SV	1508043
200.8	Cadmium	< 1.00	U	ug/L	0.500	5	08/10/2015	SV	1508043
200.8	Chromium	< 10.0	U	ug/L	5.00	5	08/10/2015	SV	1508043
200.8	Cobalt	< 1.00	U	ug/L	0.500	5	08/10/2015	SV	1508043
200.8	Copper	9.13		ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Lead	19.7		ug/L	0.500	5	08/10/2015	SV	1508043
200.8	Molybdenum	< 5.00	U	ug/L	5.00	5	08/10/2015	SV	1508043
200.8	Nickel	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Selenium	< 10.0	U	ug/L	5.00	5	08/10/2015	SV	1508043
200.8	Silver	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Thallium	11.9		ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Vanadium	< 15.0	U	ug/L	10.0	5	08/10/2015	SV	1508043

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

## Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID: GKMSW02-080815

Date / Time Sampled: 08/08/15 12:30

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-28 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	1580		ug/L	20.0	1	08/10/2015	SV	1508043
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/10/2015	SV	1508043
200.7	Calcium	35800		ug/L	100	1	08/10/2015	SV	1508043
200.7	Iron	5370		ug/L	100	1	08/10/2015	SV	1508043
200.7	Magnesium	4560		ug/L	100	1	08/10/2015	SV	1508043
200.7	Manganese	502		ug/L	2.00	1	08/10/2015	SV	1508043
200.7	Potassium	1080		ug/L	250	1	08/10/2015	SV	1508043
200.7	Sodium	2200		ug/L	250	1	08/10/2015	SV	1508043
200.7	Zinc	251		ug/L	10.0	1	08/10/2015	SV	1508043
200.8	Antimony	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Arsenic	5.99	J	ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Barium	34.6	J	ug/L	25.0	5	08/10/2015	SV	1508043
200.8	Cadmium	0.897	J	ug/L	0.500	5	08/10/2015	SV	1508043
200.8	Chromium	< 10.0	U	ug/L	5.00	5	08/10/2015	SV	1508043
200.8	Cobalt	1.88		ug/L	0.500	5	08/10/2015	SV	1508043
200.8	Copper	32.4		ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Lead	61.2		ug/L	0.500	5	08/10/2015	SV	1508043
200.8	Molybdenum	< 5.00	U	ug/L	5.00	5	08/10/2015	SV	1508043
200.8	Nickel	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Selenium	< 10.0	U	ug/L	5.00	5	08/10/2015	SV	1508043
200.8	Silver	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Thallium	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Vanadium	< 15.0	U	ug/L	10.0	5	08/10/2015	SV	1508043

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

## Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID: GKMSW02-080915

Date / Time Sampled: 08/09/15 11:37

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-31 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	696		ug/L	20.0	1	08/10/2015	SV	1508043
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/10/2015	SV	1508043
200.7	Calcium	36800		ug/L	100	1	08/10/2015	SV	1508043
200.7	Iron	1770		ug/L	100	1	08/10/2015	SV	1508043
200.7	Magnesium	4500		ug/L	100	1	08/10/2015	SV	1508043
200.7	Manganese	426		ug/L	2.00	1	08/10/2015	SV	1508043
200.7	Potassium	870	J	ug/L	250	1	08/10/2015	SV	1508043
200.7	Sodium	2240		ug/L	250	1	08/10/2015	SV	1508043
200.7	Zinc	205		ug/L	10.0	1	08/10/2015	SV	1508043
200.8	Antimony	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Arsenic	< 10.0	U	ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Barium	32.5	J	ug/L	25.0	5	08/10/2015	SV	1508043
200.8	Cadmium	0.618	J	ug/L	0.500	5	08/10/2015	SV	1508043
200.8	Chromium	< 10.0	U	ug/L	5.00	5	08/10/2015	SV	1508043
200.8	Cobalt	1.57		ug/L	0.500	5	08/10/2015	SV	1508043
200.8	Copper	21.9		ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Lead	12.0		ug/L	0.500	5	08/10/2015	SV	1508043
200.8	Molybdenum	< 5.00	U	ug/L	5.00	5	08/10/2015	SV	1508043
200.8	Nickel	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Selenium	< 10.0	U	ug/L	5.00	5	08/10/2015	SV	1508043
200.8	Silver	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Thallium	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Vanadium	< 15.0	U	ug/L	10.0	5	08/10/2015	SV	1508043

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

## Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID: GKMSW03-080815

Date / Time Sampled: 08/08/15 14:35

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-34 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	1520		ug/L	20.0	1	08/10/2015	SV	1508043
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/10/2015	SV	1508043
200.7	Calcium	52200		ug/L	100	1	08/10/2015	SV	1508043
200.7	Iron	3550		ug/L	100	1	08/10/2015	SV	1508043
200.7	Magnesium	3980		ug/L	100	1	08/10/2015	SV	1508043
200.7	Manganese	1100		ug/L	2.00	1	08/10/2015	SV	1508043
200.7	Potassium	719	J	ug/L	250	1	08/10/2015	SV	1508043
200.7	Sodium	2310		ug/L	250	1	08/10/2015	SV	1508043
200.7	Zinc	531		ug/L	10.0	1	08/10/2015	SV	1508043
200.8	Antimony	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Arsenic	< 10.0	U	ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Barium	< 50.0	U	ug/L	25.0	5	08/10/2015	SV	1508043
200.8	Cadmium	1.61		ug/L	0.500	5	08/10/2015	SV	1508043
200.8	Chromium	< 10.0	U	ug/L	5.00	5	08/10/2015	SV	1508043
200.8	Cobalt	4.18		ug/L	0.500	5	08/10/2015	SV	1508043
200.8	Copper	54.8		ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Lead	18.7		ug/L	0.500	5	08/10/2015	SV	1508043
200.8	Molybdenum	< 5.00	U	ug/L	5.00	5	08/10/2015	SV	1508043
200.8	Nickel	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Selenium	< 10.0	U	ug/L	5.00	5	08/10/2015	SV	1508043
200.8	Silver	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Thallium	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Vanadium	< 15.0	U	ug/L	10.0	5	08/10/2015	SV	1508043

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

## Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID: GKMSW03-080915

Date / Time Sampled: 08/09/15 13:27

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-37 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	1580		ug/L	20.0	1	08/10/2015	SV	1508043
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/10/2015	SV	1508043
200.7	Calcium	54200		ug/L	100	1	08/10/2015	SV	1508043
200.7	Iron	3340		ug/L	100	1	08/10/2015	SV	1508043
200.7	Magnesium	4120		ug/L	100	1	08/10/2015	SV	1508043
200.7	Manganese	1120		ug/L	2.00	1	08/10/2015	SV	1508043
200.7	Potassium	811	J	ug/L	250	1	08/10/2015	SV	1508043
200.7	Sodium	2470		ug/L	250	1	08/10/2015	SV	1508043
200.7	Zinc	571		ug/L	10.0	1	08/10/2015	SV	1508043
200.8	Antimony	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Arsenic	< 10.0	U	ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Barium	< 50.0	U	ug/L	25.0	5	08/10/2015	SV	1508043
200.8	Cadmium	1.61		ug/L	0.500	5	08/10/2015	SV	1508043
200.8	Chromium	< 10.0	U	ug/L	5.00	5	08/10/2015	SV	1508043
200.8	Cobalt	4.45		ug/L	0.500	5	08/10/2015	SV	1508043
200.8	Copper	57.2		ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Lead	11.6		ug/L	0.500	5	08/10/2015	SV	1508043
200.8	Molybdenum	< 5.00	U	ug/L	5.00	5	08/10/2015	SV	1508043
200.8	Nickel	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Selenium	< 10.0	U	ug/L	5.00	5	08/10/2015	SV	1508043
200.8	Silver	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Thallium	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508043
200.8	Vanadium	< 15.0	U	ug/L	10.0	5	08/10/2015	SV	1508043

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

## Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID: GKMSW04-080815

Date / Time Sampled: 08/08/15 11:10

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-40 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	803		ug/L	20.0	1	08/10/2015	SV	1508046
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/10/2015	SV	1508046
200.7	Calcium	50100		ug/L	100	1	08/10/2015	SV	1508046
200.7	Iron	2920		ug/L	100	1	08/10/2015	SV	1508046
200.7	Magnesium	6950		ug/L	100	1	08/10/2015	SV	1508046
200.7	Manganese	186		ug/L	2.00	1	08/10/2015	SV	1508046
200.7	Potassium	1990		ug/L	250	1	08/10/2015	SV	1508046
200.7	Sodium	9690		ug/L	250	1	08/10/2015	SV	1508046
200.7	Zinc	124		ug/L	10.0	1	08/10/2015	SV	1508046
200.8	Antimony	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Arsenic	< 10.0	U	ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Barium	44.1	J	ug/L	25.0	5	08/10/2015	SV	1508046
200.8	Cadmium	< 1.00	U	ug/L	0.500	5	08/10/2015	SV	1508046
200.8	Chromium	< 10.0	U	ug/L	5.00	5	08/10/2015	SV	1508046
200.8	Cobalt	0.607	J	ug/L	0.500	5	08/10/2015	SV	1508046
200.8	Copper	15.8		ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Lead	37.6		ug/L	0.500	5	08/10/2015	SV	1508046
200.8	Molybdenum	< 5.00	U	ug/L	5.00	5	08/10/2015	SV	1508046
200.8	Nickel	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Selenium	< 10.0	U	ug/L	5.00	5	08/10/2015	SV	1508046
200.8	Silver	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Thallium	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Vanadium	< 15.0	U	ug/L	10.0	5	08/10/2015	SV	1508046



Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

## Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID: GKMSW04-080915

Date / Time Sampled: 08/09/15 12:45

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-43 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	603		ug/L	20.0	1	08/10/2015	SV	1508046
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/10/2015	SV	1508046
200.7	Calcium	50400		ug/L	100	1	08/10/2015	SV	1508046
200.7	Iron	1810		ug/L	100	1	08/10/2015	SV	1508046
200.7	Magnesium	7140		ug/L	100	1	08/10/2015	SV	1508046
200.7	Manganese	164		ug/L	2.00	1	08/10/2015	SV	1508046
200.7	Potassium	1930		ug/L	250	1	08/10/2015	SV	1508046
200.7	Sodium	9810		ug/L	250	1	08/10/2015	SV	1508046
200.7	Zinc	99.9		ug/L	10.0	1	08/10/2015	SV	1508046
200.8	Antimony	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Arsenic	< 10.0	U	ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Barium	41.8	J	ug/L	25.0	5	08/10/2015	SV	1508046
200.8	Cadmium	< 1.00	U	ug/L	0.500	5	08/10/2015	SV	1508046
200.8	Chromium	< 10.0	U	ug/L	5.00	5	08/10/2015	SV	1508046
200.8	Cobalt	0.528	J	ug/L	0.500	5	08/10/2015	SV	1508046
200.8	Copper	11.7		ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Lead	22.3		ug/L	0.500	5	08/10/2015	SV	1508046
200.8	Molybdenum	< 5.00	U	ug/L	5.00	5	08/10/2015	SV	1508046
200.8	Nickel	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Selenium	< 10.0	U	ug/L	5.00	5	08/10/2015	SV	1508046
200.8	Silver	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Thallium	14.9		ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Vanadium	< 15.0	U	ug/L	10.0	5	08/10/2015	SV	1508046

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

## Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID: GKMSW05-080815

Date / Time Sampled: 08/08/15 11:50

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-46 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	688		ug/L	20.0	1	08/10/2015	SV	1508046
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/10/2015	SV	1508046
200.7	Calcium	52600		ug/L	100	1	08/10/2015	SV	1508046
200.7	Iron	2640		ug/L	100	1	08/10/2015	SV	1508046
200.7	Magnesium	7350		ug/L	100	1	08/10/2015	SV	1508046
200.7	Manganese	162		ug/L	2.00	1	08/10/2015	SV	1508046
200.7	Potassium	2010		ug/L	250	1	08/10/2015	SV	1508046
200.7	Sodium	10300		ug/L	250	1	08/10/2015	SV	1508046
200.7	Zinc	99.0		ug/L	10.0	1	08/10/2015	SV	1508046
200.8	Antimony	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Arsenic	2.65	J	ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Barium	44.5	J	ug/L	25.0	5	08/10/2015	SV	1508046
200.8	Cadmium	< 1.00	U	ug/L	0.500	5	08/10/2015	SV	1508046
200.8	Chromium	< 10.0	U	ug/L	5.00	5	08/10/2015	SV	1508046
200.8	Cobalt	0.520	J	ug/L	0.500	5	08/10/2015	SV	1508046
200.8	Copper	14.4		ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Lead	30.7		ug/L	0.500	5	08/10/2015	SV	1508046
200.8	Molybdenum	< 5.00	U	ug/L	5.00	5	08/10/2015	SV	1508046
200.8	Nickel	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Selenium	< 10.0	U	ug/L	5.00	5	08/10/2015	SV	1508046
200.8	Silver	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Thallium	3.51	J	ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Vanadium	< 15.0	U	ug/L	10.0	5	08/10/2015	SV	1508046

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

## Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID: GKMSW05-080915

Date / Time Sampled: 08/09/15 12:25

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-49 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	526		ug/L	20.0	1	08/10/2015	SV	1508046
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/10/2015	SV	1508046
200.7	Calcium	49700		ug/L	100	1	08/10/2015	SV	1508046
200.7	Iron	1540		ug/L	100	1	08/10/2015	SV	1508046
200.7	Magnesium	7150		ug/L	100	1	08/10/2015	SV	1508046
200.7	Manganese	140		ug/L	2.00	1	08/10/2015	SV	1508046
200.7	Potassium	1900		ug/L	250	1	08/10/2015	SV	1508046
200.7	Sodium	9700		ug/L	250	1	08/10/2015	SV	1508046
200.7	Zinc	78.2		ug/L	10.0	1	08/10/2015	SV	1508046
200.8	Antimony	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Arsenic	< 10.0	U	ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Barium	42.4	J	ug/L	25.0	5	08/10/2015	SV	1508046
200.8	Cadmium	< 1.00	U	ug/L	0.500	5	08/10/2015	SV	1508046
200.8	Chromium	< 10.0	U	ug/L	5.00	5	08/10/2015	SV	1508046
200.8	Cobalt	< 1.00	U	ug/L	0.500	5	08/10/2015	SV	1508046
200.8	Copper	9.54		ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Lead	20.4		ug/L	0.500	5	08/10/2015	SV	1508046
200.8	Molybdenum	< 5.00	U	ug/L	5.00	5	08/10/2015	SV	1508046
200.8	Nickel	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Selenium	< 10.0	U	ug/L	5.00	5	08/10/2015	SV	1508046
200.8	Silver	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Thallium	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Vanadium	< 15.0	U	ug/L	10.0	5	08/10/2015	SV	1508046

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

## Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID: GKMSW06-080815

Date / Time Sampled: 08/08/15 00:00

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-52 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	1600		ug/L	20.0	1	08/10/2015	SV	1508046
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/10/2015	SV	1508046
200.7	Calcium	35200		ug/L	100	1	08/10/2015	SV	1508046
200.7	Iron	5540		ug/L	100	1	08/10/2015	SV	1508046
200.7	Magnesium	4650		ug/L	100	1	08/10/2015	SV	1508046
200.7	Manganese	494		ug/L	2.00	1	08/10/2015	SV	1508046
200.7	Potassium	1070		ug/L	250	1	08/10/2015	SV	1508046
200.7	Sodium	2240		ug/L	250	1	08/10/2015	SV	1508046
200.7	Zinc	244		ug/L	10.0	1	08/10/2015	SV	1508046
200.8	Antimony	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Arsenic	< 10.0	U	ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Barium	40.0	J	ug/L	25.0	5	08/10/2015	SV	1508046
200.8	Cadmium	0.704	J	ug/L	0.500	5	08/10/2015	SV	1508046
200.8	Chromium	< 10.0	U	ug/L	5.00	5	08/10/2015	SV	1508046
200.8	Cobalt	1.78		ug/L	0.500	5	08/10/2015	SV	1508046
200.8	Copper	33.9		ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Lead	62.6		ug/L	0.500	5	08/10/2015	SV	1508046
200.8	Molybdenum	< 5.00	U	ug/L	5.00	5	08/10/2015	SV	1508046
200.8	Nickel	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Selenium	< 10.0	U	ug/L	5.00	5	08/10/2015	SV	1508046
200.8	Silver	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Thallium	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Vanadium	< 15.0	U	ug/L	10.0	5	08/10/2015	SV	1508046

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

## Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID: GKMSW07-080815

Date / Time Sampled: 08/08/15 13:50

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-55 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	8370		ug/L	20.0	1	08/10/2015	SV	1508046
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/10/2015	SV	1508046
200.7	Calcium	139000		ug/L	100	1	08/10/2015	SV	1508046
200.7	Iron	24900		ug/L	100	1	08/10/2015	SV	1508046
200.7	Magnesium	9910		ug/L	100	1	08/10/2015	SV	1508046
200.7	Manganese	5450		ug/L	2.00	1	08/10/2015	SV	1508046
200.7	Potassium	1790		ug/L	250	1	08/10/2015	SV	1508046
200.7	Sodium	3680		ug/L	250	1	08/10/2015	SV	1508046
200.7	Zinc	3350		ug/L	10.0	1	08/10/2015	SV	1508046
200.8	Antimony	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Arsenic	11.0		ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Barium	28.8	J	ug/L	25.0	5	08/10/2015	SV	1508046
200.8	Cadmium	9.50		ug/L	0.500	5	08/10/2015	SV	1508046
200.8	Chromium	< 10.0	U	ug/L	5.00	5	08/10/2015	SV	1508046
200.8	Cobalt	23.3		ug/L	0.500	5	08/10/2015	SV	1508046
200.8	Copper	438		ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Lead	121		ug/L	0.500	5	08/10/2015	SV	1508046
200.8	Molybdenum	< 5.00	U	ug/L	5.00	5	08/10/2015	SV	1508046
200.8	Nickel	8.61		ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Selenium	< 10.0	U	ug/L	5.00	5	08/10/2015	SV	1508046
200.8	Silver	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Thallium	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Vanadium	< 15.0	U	ug/L	10.0	5	08/10/2015	SV	1508046

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

## Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID: GKMSW08-080815

Date / Time Sampled: 08/08/15 14:10

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-58 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	141		ug/L	20.0	1	08/10/2015	SV	1508046
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/10/2015	SV	1508046
200.7	Calcium	37100		ug/L	100	1	08/10/2015	SV	1508046
200.7	Iron	155	J	ug/L	100	1	08/10/2015	SV	1508046
200.7	Magnesium	2610		ug/L	100	1	08/10/2015	SV	1508046
200.7	Manganese	808		ug/L	2.00	1	08/10/2015	SV	1508046
200.7	Potassium	548	J	ug/L	250	1	08/10/2015	SV	1508046
200.7	Sodium	1710		ug/L	250	1	08/10/2015	SV	1508046
200.7	Zinc	233		ug/L	10.0	1	08/10/2015	SV	1508046
200.8	Antimony	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Arsenic	< 10.0	U	ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Barium	< 50.0	U	ug/L	25.0	5	08/10/2015	SV	1508046
200.8	Cadmium	0.707	J	ug/L	0.500	5	08/10/2015	SV	1508046
200.8	Chromium	< 10.0	U	ug/L	5.00	5	08/10/2015	SV	1508046
200.8	Cobalt	< 1.00	U	ug/L	0.500	5	08/10/2015	SV	1508046
200.8	Copper	6.32		ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Lead	2.81		ug/L	0.500	5	08/10/2015	SV	1508046
200.8	Molybdenum	< 5.00	U	ug/L	5.00	5	08/10/2015	SV	1508046
200.8	Nickel	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Selenium	< 10.0	U	ug/L	5.00	5	08/10/2015	SV	1508046
200.8	Silver	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Thallium	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Vanadium	< 15.0	U	ug/L	10.0	5	08/10/2015	SV	1508046

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

## Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID: GKMSW08-080915

Date / Time Sampled: 08/09/15 13:00

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-61 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	108		ug/L	20.0	1	08/10/2015	SV	1508046
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/10/2015	SV	1508046
200.7	Calcium	38600		ug/L	100	1	08/10/2015	SV	1508046
200.7	Iron	125	J	ug/L	100	1	08/10/2015	SV	1508046
200.7	Magnesium	2660		ug/L	100	1	08/10/2015	SV	1508046
200.7	Manganese	777		ug/L	2.00	1	08/10/2015	SV	1508046
200.7	Potassium	556	J	ug/L	250	1	08/10/2015	SV	1508046
200.7	Sodium	1740		ug/L	250	1	08/10/2015	SV	1508046
200.7	Zinc	237		ug/L	10.0	1	08/10/2015	SV	1508046
200.8	Antimony	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Arsenic	< 10.0	U	ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Barium	< 50.0	U	ug/L	25.0	5	08/10/2015	SV	1508046
200.8	Cadmium	0.799	J	ug/L	0.500	5	08/10/2015	SV	1508046
200.8	Chromium	< 10.0	U	ug/L	5.00	5	08/10/2015	SV	1508046
200.8	Cobalt	< 1.00	U	ug/L	0.500	5	08/10/2015	SV	1508046
200.8	Copper	4.88	J	ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Lead	1.68		ug/L	0.500	5	08/10/2015	SV	1508046
200.8	Molybdenum	< 5.00	U	ug/L	5.00	5	08/10/2015	SV	1508046
200.8	Nickel	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Selenium	< 10.0	U	ug/L	5.00	5	08/10/2015	SV	1508046
200.8	Silver	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Thallium	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Vanadium	< 15.0	U	ug/L	10.0	5	08/10/2015	SV	1508046

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

## Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID: GKMSW12-080915

Date / Time Sampled: 08/09/15 14:00

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-64 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	469		ug/L	20.0	1	08/10/2015	SV	1508046
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/10/2015	SV	1508046
200.7	Calcium	50200		ug/L	100	1	08/10/2015	SV	1508046
200.7	Iron	1420		ug/L	100	1	08/10/2015	SV	1508046
200.7	Magnesium	7160		ug/L	100	1	08/10/2015	SV	1508046
200.7	Manganese	162		ug/L	2.00	1	08/10/2015	SV	1508046
200.7	Potassium	1900		ug/L	250	1	08/10/2015	SV	1508046
200.7	Sodium	9880		ug/L	250	1	08/10/2015	SV	1508046
200.7	Zinc	89.3		ug/L	10.0	1	08/10/2015	SV	1508046
200.8	Antimony	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Arsenic	< 10.0	U	ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Barium	41.2	J	ug/L	25.0	5	08/10/2015	SV	1508046
200.8	Cadmium	< 1.00	U	ug/L	0.500	5	08/10/2015	SV	1508046
200.8	Chromium	< 10.0	U	ug/L	5.00	5	08/10/2015	SV	1508046
200.8	Cobalt	< 1.00	U	ug/L	0.500	5	08/10/2015	SV	1508046
200.8	Copper	9.42		ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Lead	17.5		ug/L	0.500	5	08/10/2015	SV	1508046
200.8	Molybdenum	< 5.00	U	ug/L	5.00	5	08/10/2015	SV	1508046
200.8	Nickel	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Selenium	< 10.0	U	ug/L	5.00	5	08/10/2015	SV	1508046
200.8	Silver	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Thallium	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Vanadium	< 15.0	U	ug/L	10.0	5	08/10/2015	SV	1508046



Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

## Metals (Total Recov) by EPA 200/7000 Series Methods

Station ID: GKMTB01-080815

Date / Time Sampled: 08/08/15 00:00

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-67 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
200.7	Aluminum	< 50.0	U	ug/L	20.0	1	08/10/2015	SV	1508046
200.7	Beryllium	< 5.00	U	ug/L	2.00	1	08/10/2015	SV	1508046
200.7	Calcium	< 250	U	ug/L	100	1	08/10/2015	SV	1508046
200.7	Iron	< 250	U	ug/L	100	1	08/10/2015	SV	1508046
200.7	Magnesium	< 250	U	ug/L	100	1	08/10/2015	SV	1508046
200.7	Manganese	< 5.00	U	ug/L	2.00	1	08/10/2015	SV	1508046
200.7	Potassium	< 1000	U	ug/L	250	1	08/10/2015	SV	1508046
200.7	Sodium	< 1000	U	ug/L	250	1	08/10/2015	SV	1508046
200.7	<b>Zinc</b>	<b>10.4</b>	J	ug/L	10.0	1	08/10/2015	SV	1508046
200.8	Antimony	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Arsenic	< 10.0	U	ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Barium	< 50.0	U	ug/L	25.0	5	08/10/2015	SV	1508046
200.8	Cadmium	< 1.00	U	ug/L	0.500	5	08/10/2015	SV	1508046
200.8	Chromium	< 10.0	U	ug/L	5.00	5	08/10/2015	SV	1508046
200.8	Cobalt	< 1.00	U	ug/L	0.500	5	08/10/2015	SV	1508046
200.8	Copper	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Lead	< 1.00	U	ug/L	0.500	5	08/10/2015	SV	1508046
200.8	Molybdenum	< 5.00	U	ug/L	5.00	5	08/10/2015	SV	1508046
200.8	Nickel	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Selenium	< 10.0	U	ug/L	5.00	5	08/10/2015	SV	1508046
200.8	Silver	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Thallium	< 5.00	U	ug/L	2.50	5	08/10/2015	SV	1508046
200.8	Vanadium	< 15.0	U	ug/L	10.0	5	08/10/2015	SV	1508046

"J" Qualifier indicates an estimated value

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

Mercury only (Total) by EPA 245.1 / 7470A Method

Station ID: AMIMAS-ROTARY PARK-0000  
EPA Tag No:

Date / Time Sampled: 08/07/15 00:00  
Matrix: Surface Water

Workorder: C150802  
Lab Number: C150802-01 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
245.1	Mercury	0.149	J	ug/L	0.0500	1	08/10/2015	NP	1508045

Mercury only (Total) by EPA 245.1 / 7470A Method

Station ID: AMIMAS-ROTARY PARK-0030  
EPA Tag No:

Date / Time Sampled: 08/07/15 00:30  
Matrix: Surface Water

Workorder: C150802  
Lab Number: C150802-04 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
245.1	Mercury	0.255		ug/L	0.0500	1	08/10/2015	NP	1508045

Mercury only (Total) by EPA 245.1 / 7470A Method

Station ID: AMIMAS-ROTARY PARK-1000  
EPA Tag No:

Date / Time Sampled: 08/07/15 10:00  
Matrix: Surface Water

Workorder: C150802  
Lab Number: C150802-07 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
245.1	Mercury	< 0.100	U	ug/L	0.0500	1	08/10/2015	NP	1508045

Mercury only (Total) by EPA 245.1 / 7470A Method

Station ID: AMIMAS-ROTARY PARK-2005  
EPA Tag No:

Date / Time Sampled: 08/06/15 20:05  
Matrix: Surface Water

Workorder: C150802  
Lab Number: C150802-10 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
245.1	Mercury	< 0.100	U	ug/L	0.0500	1	08/10/2015	NP	1508045

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

## Mercury only (Total) by EPA 245.1 / 7470A Method

Station ID: AMIMAS-ROTARY PARK-2108  
EPA Tag No:Date / Time Sampled: 08/06/15 21:08  
Matrix: Surface WaterWorkorder: C150802  
Lab Number: C150802-13 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
245.1	Mercury	< 0.100	U	ug/L	0.0500	1	08/10/2015	NP	1508045

## Mercury only (Total) by EPA 245.1 / 7470A Method

Station ID: AMIMAS-ROTARY PARK-2200  
EPA Tag No:Date / Time Sampled: 08/06/15 22:00  
Matrix: Surface WaterWorkorder: C150802  
Lab Number: C150802-16 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
245.1	Mercury	< 0.100	U	ug/L	0.0500	1	08/10/2015	NP	1508045

## Mercury only (Total) by EPA 245.1 / 7470A Method

Station ID: AMIMAS-ROTARY PARK-2300  
EPA Tag No:Date / Time Sampled: 08/06/15 23:00  
Matrix: Surface WaterWorkorder: C150802  
Lab Number: C150802-19 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
245.1	Mercury	0.0880	J	ug/L	0.0500	1	08/10/2015	NP	1508045

## Mercury only (Total) by EPA 245.1 / 7470A Method

Station ID: GKMSW01-080815  
EPA Tag No:Date / Time Sampled: 08/08/15 10:05  
Matrix: Surface WaterWorkorder: C150802  
Lab Number: C150802-22 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
245.1	Mercury	< 0.100	U	ug/L	0.0500	1	08/10/2015	NP	1508045

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

## Mercury only (Total) by EPA 245.1 / 7470A Method

Station ID: GKMSW01-080915

Date / Time Sampled: 08/09/15 12:00

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-25 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
245.1	Mercury	< 0.100	U	ug/L	0.0500	1	08/10/2015	NP	1508045

## Mercury only (Total) by EPA 245.1 / 7470A Method

Station ID: GKMSW02-080815

Date / Time Sampled: 08/08/15 12:30

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-28 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
245.1	Mercury	< 0.100	U	ug/L	0.0500	1	08/10/2015	NP	1508045

## Mercury only (Total) by EPA 245.1 / 7470A Method

Station ID: GKMSW02-080915

Date / Time Sampled: 08/09/15 11:37

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-31 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
245.1	Mercury	< 0.100	U	ug/L	0.0500	1	08/10/2015	NP	1508045

## Mercury only (Total) by EPA 245.1 / 7470A Method

Station ID: GKMSW03-080815

Date / Time Sampled: 08/08/15 14:35

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-34 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
245.1	Mercury	< 0.100	U	ug/L	0.0500	1	08/10/2015	NP	1508045

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

Mercury only (Total) by EPA 245.1 / 7470A Method

Station ID: GKMSW03-080915

Date / Time Sampled: 08/09/15 13:27

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-37 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
245.1	Mercury	< 0.100	U	ug/L	0.0500	1	08/10/2015	NP	1508045

Mercury only (Total) by EPA 245.1 / 7470A Method

Station ID: GKMSW04-080815

Date / Time Sampled: 08/08/15 11:10

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-40 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
245.1	Mercury	< 0.100	U	ug/L	0.0500	1	08/10/2015	NP	1508045

Mercury only (Total) by EPA 245.1 / 7470A Method

Station ID: GKMSW04-080915

Date / Time Sampled: 08/09/15 12:45

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-43 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
245.1	Mercury	< 0.100	U	ug/L	0.0500	1	08/10/2015	NP	1508045

Mercury only (Total) by EPA 245.1 / 7470A Method

Station ID: GKMSW05-080815

Date / Time Sampled: 08/08/15 11:50

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-46 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
245.1	Mercury	< 0.100	U	ug/L	0.0500	1	08/10/2015	NP	1508045

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

Mercury only (Total) by EPA 245.1 / 7470A Method

Station ID: GKMSW05-080915

Date / Time Sampled: 08/09/15 12:25

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-49 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
245.1	Mercury	< 0.100	U	ug/L	0.0500	1	08/10/2015	NP	1508045

Mercury only (Total) by EPA 245.1 / 7470A Method

Station ID: GKMSW06-080815

Date / Time Sampled: 08/08/15 00:00

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-52 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
245.1	Mercury	< 0.100	U	ug/L	0.0500	1	08/10/2015	NP	1508045

Mercury only (Total) by EPA 245.1 / 7470A Method

Station ID: GKMSW07-080815

Date / Time Sampled: 08/08/15 13:50

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-55 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
245.1	Mercury	< 0.100	U	ug/L	0.0500	1	08/10/2015	NP	1508045

Mercury only (Total) by EPA 245.1 / 7470A Method

Station ID: GKMSW08-080815

Date / Time Sampled: 08/08/15 14:10

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-58 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
245.1	Mercury	< 0.100	U	ug/L	0.0500	1	08/10/2015	NP	1508045

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

Mercury only (Total) by EPA 245.1 / 7470A Method

Station ID: GKMSW08-080915

Date / Time Sampled: 08/09/15 13:00

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-61 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
245.1	Mercury	< 0.100	U	ug/L	0.0500	1	08/10/2015	NP	1508045

Mercury only (Total) by EPA 245.1 / 7470A Method

Station ID: GKMSW12-080915

Date / Time Sampled: 08/09/15 14:00

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-64 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
245.1	Mercury	< 0.100	U	ug/L	0.0500	1	08/10/2015	NP	1508045

Mercury only (Total) by EPA 245.1 / 7470A Method

Station ID: GKMTB01-080815

Date / Time Sampled: 08/08/15 00:00

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-67 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
245.1	Mercury	< 0.100	U	ug/L	0.0500	1	08/10/2015	NP	1508045

"J" Qualifier indicates an estimated value

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

## Classical Chemistry by EPA/ASTM/APHA Methods

Station ID: AMIMAS-ROTARY PARK-0000

Date / Time Sampled: 08/07/15 00:00

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-03 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
150.1	pH	5.84		pH Units		1	08/10/2015	SW	1508052
EPA 160.1	Total Dissolved Solids	310		mg/L	10	1	08/11/2015	JCB	1508044
EPA 160.2	Total Suspended Solids	612		mg/L	10	1	08/11/2015	JCB	1508040

## Classical Chemistry by EPA/ASTM/APHA Methods

Station ID: AMIMAS-ROTARY PARK-0030

Date / Time Sampled: 08/07/15 00:30

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-06 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
150.1	pH	5.98		pH Units		1	08/10/2015	SW	1508052
EPA 160.1	Total Dissolved Solids	312		mg/L	10	1	08/11/2015	JCB	1508044
EPA 160.2	Total Suspended Solids	816		mg/L	10	1	08/11/2015	JCB	1508040

## Classical Chemistry by EPA/ASTM/APHA Methods

Station ID: AMIMAS-ROTARY PARK-1000

Date / Time Sampled: 08/07/15 10:00

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-09 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
150.1	pH	6.68		pH Units		1	08/10/2015	SW	1508052
EPA 160.1	Total Dissolved Solids	244		mg/L	10	1	08/11/2015	JCB	1508044
EPA 160.2	Total Suspended Solids	72		mg/L	10	1	08/11/2015	JCB	1508040



Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

## Classical Chemistry by EPA/ASTM/APHA Methods

Station ID: AMIMAS-ROTARY PARK-2005

Date / Time Sampled: 08/06/15 20:05

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-12 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
150.1	pH	7.09		pH Units		1	08/10/2015	SW	1508052
EPA 160.1	Total Dissolved Solids	252		mg/L	10	1	08/11/2015	JCB	1508044
EPA 160.2	Total Suspended Solids	< 10		mg/L	10	1	08/11/2015	JCB	1508040

## Classical Chemistry by EPA/ASTM/APHA Methods

Station ID: AMIMAS-ROTARY PARK-2108

Date / Time Sampled: 08/06/15 21:08

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-15 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
150.1	pH	7.12		pH Units		1	08/10/2015	SW	1508052
EPA 160.1	Total Dissolved Solids	262		mg/L	10	1	08/11/2015	JCB	1508044
EPA 160.2	Total Suspended Solids	< 10		mg/L	10	1	08/11/2015	JCB	1508040

## Classical Chemistry by EPA/ASTM/APHA Methods

Station ID: AMIMAS-ROTARY PARK-2200

Date / Time Sampled: 08/06/15 22:00

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-18 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
150.1	pH	7.14		pH Units		1	08/10/2015	SW	1508052
EPA 160.1	Total Dissolved Solids	240		mg/L	10	1	08/11/2015	JCB	1508044
EPA 160.2	Total Suspended Solids	< 10		mg/L	10	1	08/11/2015	JCB	1508040

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

## Classical Chemistry by EPA/ASTM/APHA Methods

Station ID: AMIMAS-ROTARY PARK-2300

Date / Time Sampled: 08/06/15 23:00

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-21 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
150.1	pH	7.10		pH Units		1	08/10/2015	SW	1508052
EPA 160.1	Total Dissolved Solids	274		mg/L	10	1	08/11/2015	JCB	1508044
EPA 160.2	Total Suspended Solids	< 10		mg/L	10	1	08/11/2015	JCB	1508040

## Classical Chemistry by EPA/ASTM/APHA Methods

Station ID: GKMSW01-080815

Date / Time Sampled: 08/08/15 10:05

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-24 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
EPA 160.1	Total Dissolved Solids	266		mg/L	10	1	08/11/2015	JCB	1508044
EPA 160.2	Total Suspended Solids	< 10		mg/L	10	1	08/11/2015	JCB	1508040

## Classical Chemistry by EPA/ASTM/APHA Methods

Station ID: GKMSW01-080915

Date / Time Sampled: 08/09/15 12:00

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-27 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
EPA 160.1	Total Dissolved Solids	244		mg/L	10	1	08/11/2015	JCB	1508044
EPA 160.2	Total Suspended Solids	< 10		mg/L	10	1	08/11/2015	JCB	1508040
EPA 310.1	Total Alkalinity	76.6		mg CaCO3 / L	5.00	1	08/10/2015	SW	1508047

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

## Classical Chemistry by EPA/ASTM/APHA Methods

Station ID: GKMSW02-080815

Date / Time Sampled: 08/08/15 12:30

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-30 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
EPA 160.1	Total Dissolved Solids	168		mg/L	10	1	08/11/2015	JCB	1508044
EPA 160.2	Total Suspended Solids	< 10		mg/L	10	1	08/11/2015	JCB	1508040

## Classical Chemistry by EPA/ASTM/APHA Methods

Station ID: GKMSW02-080915

Date / Time Sampled: 08/09/15 11:37

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-33 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
EPA 160.1	Total Dissolved Solids	160		mg/L	10	1	08/11/2015	JCB	1508044
EPA 160.2	Total Suspended Solids	< 10		mg/L	10	1	08/11/2015	JCB	1508040
EPA 310.1	Total Alkalinity	35.7		mg CaCO3 / L	5.00	1	08/10/2015	SW	1508047

## Classical Chemistry by EPA/ASTM/APHA Methods

Station ID: GKMSW03-080815

Date / Time Sampled: 08/08/15 14:35

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-36 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
EPA 160.1	Total Dissolved Solids	236		mg/L	10	1	08/11/2015	JCB	1508044
EPA 160.2	Total Suspended Solids	< 10		mg/L	10	1	08/11/2015	JCB	1508040

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

## Classical Chemistry by EPA/ASTM/APHA Methods

Station ID: GKMSW03-080915

Date / Time Sampled: 08/09/15 13:27

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-39 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
EPA 160.1	Total Dissolved Solids	234		mg/L	10	1	08/11/2015	JCB	1508044
EPA 160.2	Total Suspended Solids	< 10		mg/L	10	1	08/11/2015	JCB	1508040
EPA 310.1	Total Alkalinity	11.2		mg CaCO3 / L	5.00	1	08/10/2015	SW	1508047

## Classical Chemistry by EPA/ASTM/APHA Methods

Station ID: GKMSW04-080815

Date / Time Sampled: 08/08/15 11:10

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-42 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
EPA 160.1	Total Dissolved Solids	246		mg/L	10	1	08/11/2015	JCB	1508044
EPA 160.2	Total Suspended Solids	< 10		mg/L	10	1	08/11/2015	JCB	1508040

## Classical Chemistry by EPA/ASTM/APHA Methods

Station ID: GKMSW04-080915

Date / Time Sampled: 08/09/15 12:45

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-45 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
EPA 160.1	Total Dissolved Solids	238		mg/L	10	1	08/11/2015	JCB	1508044
EPA 160.2	Total Suspended Solids	< 10		mg/L	10	1	08/11/2015	JCB	1508040
EPA 310.1	Total Alkalinity	76.3		mg CaCO3 / L	5.00	1	08/10/2015	SW	1508047

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

## Classical Chemistry by EPA/ASTM/APHA Methods

Station ID: GKMSW05-080815

Date / Time Sampled: 08/08/15 11:50

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-48 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
EPA 160.1	Total Dissolved Solids	248		mg/L	10	1	08/11/2015	JCB	1508044
EPA 160.2	Total Suspended Solids	< 10		mg/L	10	1	08/11/2015	JCB	1508040

## Classical Chemistry by EPA/ASTM/APHA Methods

Station ID: GKMSW05-080915

Date / Time Sampled: 08/09/15 12:25

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-51 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
EPA 160.1	Total Dissolved Solids	234		mg/L	10	1	08/11/2015	JCB	1508044
EPA 160.2	Total Suspended Solids	< 10		mg/L	10	1	08/11/2015	JCB	1508040
EPA 310.1	Total Alkalinity	77.2		mg CaCO3 / L	5.00	1	08/10/2015	SW	1508047

## Classical Chemistry by EPA/ASTM/APHA Methods

Station ID: GKMSW06-080815

Date / Time Sampled: 08/08/15 00:00

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-54 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
EPA 160.1	Total Dissolved Solids	156		mg/L	10	1	08/11/2015	JCB	1508044
EPA 160.2	Total Suspended Solids	< 10		mg/L	10	1	08/11/2015	JCB	1508040

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

## Classical Chemistry by EPA/ASTM/APHA Methods

Station ID: GKMSW07-080815

Date / Time Sampled: 08/08/15 13:50

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-57 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
EPA 160.1	Total Dissolved Solids	810		mg/L	10	1	08/11/2015	JCB	1508044
EPA 160.2	Total Suspended Solids	< 10		mg/L	10	1	08/11/2015	JCB	1508040

## Classical Chemistry by EPA/ASTM/APHA Methods

Station ID: GKMSW08-080815

Date / Time Sampled: 08/08/15 14:10

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-60 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
EPA 160.1	Total Dissolved Solids	162		mg/L	10	1	08/11/2015	JCB	1508044
EPA 160.2	Total Suspended Solids	< 10		mg/L	10	1	08/11/2015	JCB	1508040

## Classical Chemistry by EPA/ASTM/APHA Methods

Station ID: GKMSW08-080915

Date / Time Sampled: 08/09/15 13:00

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-63 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
EPA 160.1	Total Dissolved Solids	156		mg/L	10	1	08/11/2015	JCB	1508044
EPA 160.2	Total Suspended Solids	< 10		mg/L	10	1	08/11/2015	JCB	1508040
EPA 310.1	Total Alkalinity	32.7		mg CaCO3 / L	5.00	1	08/10/2015	SW	1508047

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

Classical Chemistry by EPA/ASTM/APHA Methods

Station ID: GKMSW12-080915

Date / Time Sampled: 08/09/15 14:00

Workorder: C150802

EPA Tag No:

Matrix: Surface Water

Lab Number: C150802-66 A

Method	Parameter	Results	Qualifier	Units	MDL	Dilution Factor	Analyzed	By	Batch
EPA 160.1	Total Dissolved Solids	250		mg/L	10	1	08/11/2015	JCB	1508044
EPA 160.2	Total Suspended Solids	14		mg/L	10	1	08/11/2015	JCB	1508040
EPA 310.1	Total Alkalinity	76.7		mg CaCO3 / L	5.00	1	08/10/2015	SW	1508047

"J" Qualifier indicates an estimated value

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

Metals (Dissolved) by EPA 200/7000 Series Methods - Quality Control

TechLaw, Inc. - ESAT Region 8

Analyte	Result	Det. Limit	Units	Spike Level	Source Result	% R	% R Limits	% D or RPD	% D or RPD Limit
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## ICPMS-PE DRC-II

Batch 1508039 - No Lab Prep Req'd

Water

ICPMS-PE DRC-II

Method Blank (1508039-BLK1)	Dilution Factor: 1	Prepared & Analyzed: 08/10/15
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Vanadium	< 2.00	3.00	ug/L
Chromium	< 1.00	2.00	"
Cobalt	< 0.100	0.200	"
Nickel	< 0.500	1.00	"
Copper	< 0.500	1.00	"
Arsenic	< 0.500	2.00	"
Selenium	< 1.00	2.00	"
Molybdenum	< 1.00	1.00	"
Silver	< 0.500	1.00	"
Cadmium	< 0.100	0.200	"
Antimony	< 0.500	1.00	"
Barium	< 5.00	10.0	"
Thallium	< 0.500	1.00	"
Lead	< 0.100	0.200	"

Method Blank Spike (1508039-BS1)	Dilution Factor: 1	Prepared & Analyzed: 08/10/15
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Vanadium	93.0	3.00	ug/L	100	93	85-115
Chromium	91.8	2.00	"	100	92	85-115
Cobalt	92.7	0.200	"	100	93	85-115
Nickel	92.2	1.00	"	100	92	85-115
Copper	91.8	1.00	"	100	92	85-115
Arsenic	94.6	2.00	"	100	95	85-115
Selenium	482	2.00	"	500	96	85-115
Molybdenum	96.3	1.00	"	100	96	85-115
Silver	94.7	1.00	"	100	95	85-115
Cadmium	96.4	0.200	"	100	96	85-115
Antimony	98.2	1.00	"	100	98	85-115
Barium	94.4	10.0	"	100	94	85-115
Thallium	94.8	1.00	"	100	95	85-115
Lead	95.2	0.200	"	100	95	85-115



Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

Metals (Dissolved) by EPA 200/7000 Series Methods - Quality Control

TechLaw, Inc. - ESAT Region 8

Analyte	Result	Det. Limit	Units	Spike Level	Source Result	% R	% R Limits	% D or RPD	% D or RPD Limit
Batch 1508039 - No Lab Prep Req'd				Water		ICPMS-PE DRC-II			
Duplicate (1508039-DUP1)		Dilution Factor: 1		Source: C150802-23		Prepared & Analyzed: 08/10/15			
Vanadium	< 2.00	3.00	ug/L		< 2.00				20
Chromium	1.59	2.00	"		1.55			3	20
Cobalt	0.606	0.200	"		0.653			8	20
Nickel	< 0.500	1.00	"		< 0.500				20
Copper	1.81	1.00	"		1.73			4	20
Arsenic	< 0.500	2.00	"		< 0.500				20
Selenium	< 1.00	2.00	"		< 1.00				20
Molybdenum	< 1.00	1.00	"		< 1.00				20
Silver	< 0.500	1.00	"		< 0.500				20
Cadmium	< 0.100	0.200	"		< 0.100				20
Antimony	< 0.500	1.00	"		< 0.500				20
Barium	40.9	10.0	"		41.4			1	20
Thallium	< 0.500	1.00	"		< 0.500				20
Lead	< 0.100	0.200	"		< 0.100				20
Matrix Spike (1508039-MS1)		Dilution Factor: 1		Source: C150802-23		Prepared & Analyzed: 08/10/15			
Vanadium	90.3	3.00	ug/L	100	< 2.00	90	70-130		
Chromium	89.3	2.00	"	100	1.55	88	70-130		
Cobalt	88.6	0.200	"	100	0.653	88	70-130		
Nickel	86.4	1.00	"	100	< 0.500	86	70-130		
Copper	87.4	1.00	"	100	1.73	86	70-130		
Arsenic	94.1	2.00	"	100	< 0.500	94	70-130		
Selenium	496	2.00	"	500	< 1.00	99	70-130		
Molybdenum	100	1.00	"	100	< 1.00	100	70-130		
Silver	93.3	1.00	"	100	< 0.500	93	70-130		
Cadmium	97.4	0.200	"	100	< 0.100	97	70-130		
Antimony	100	1.00	"	100	< 0.500	100	70-130		
Barium	136	10.0	"	100	41.4	94	70-130		
Thallium	94.3	1.00	"	100	< 0.500	94	70-130		
Lead	94.4	0.200	"	100	< 0.100	94	70-130		

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

Metals (Dissolved) by EPA 200/7000 Series Methods - Quality Control

TechLaw, Inc. - ESAT Region 8

Analyte	Result	Det. Limit	Units	Spike Level	Source Result	%R	% R Limits	% D or RPD	% D or RPD Limit
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Batch 1508039 - No Lab Prep Req'd

Water

ICPMS-PE DRC-II

Matrix Spike (1508039-MS2)

Dilution Factor: 1

Source: C150802-26

Prepared &amp; Analyzed: 08/10/15

Vanadium	88.9	3.00	ug/L	100	< 2.00	89	70-130		
Chromium	89.5	2.00	"	100	3.62	86	70-130		
Cobalt	87.2	0.200	"	100	0.872	86	70-130		
Nickel	84.2	1.00	"	100	< 0.500	84	70-130		
Copper	85.6	1.00	"	100	2.09	84	70-130		
Arsenic	101	2.00	"	100	0.512	100	70-130		
Selenium	509	2.00	"	500	< 1.00	102	70-130		
Molybdenum	98.5	1.00	"	100	< 1.00	98	70-130		
Silver	93.3	1.00	"	100	< 0.500	93	70-130		
Cadmium	95.0	0.200	"	100	< 0.100	95	70-130		
Antimony	98.8	1.00	"	100	< 0.500	99	70-130		
Barium	134	10.0	"	100	39.4	95	70-130		
Thallium	93.8	1.00	"	100	< 0.500	94	70-130		
Lead	92.2	0.200	"	100	< 0.100	92	70-130		

Batch 1508042 - No Lab Prep Req'd

Water

ICPMS-PE DRC-II

Method Blank (1508042-BLK1)

Dilution Factor: 1

Prepared &amp; Analyzed: 08/10/15

Vanadium	< 2.00	3.00	ug/L						
Chromium	< 1.00	2.00	"						
Cobalt	< 0.100	0.200	"						
Nickel	< 0.500	1.00	"						
Copper	< 0.500	1.00	"						
Arsenic	< 0.500	2.00	"						
Selenium	< 1.00	2.00	"						
Molybdenum	< 1.00	1.00	"						
Silver	< 0.500	1.00	"						
Cadmium	< 0.100	0.200	"						
Antimony	< 0.500	1.00	"						
Barium	< 5.00	10.0	"						
Thallium	< 0.500	1.00	"						
Lead	< 0.100	0.200	"						

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

Metals (Dissolved) by EPA 200/7000 Series Methods - Quality Control

TechLaw, Inc. - ESAT Region 8

Analyte	Result	Det. Limit	Units	Spike Level	Source Result	%R	% R Limits	% D or RPD	% D or RPD Limit
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Batch 1508042 - No Lab Prep Req'd

Water

ICPMS-PE DRC-II

Method Blank Spike (1508042-BS1)

Dilution Factor: 1

Prepared &amp; Analyzed: 08/10/15

Vanadium	92.9	3.00	ug/L	100		93	85-115		
Chromium	91.0	2.00	"	100		91	85-115		
Cobalt	93.8	0.200	"	100		94	85-115		
Nickel	91.9	1.00	"	100		92	85-115		
Copper	90.4	1.00	"	100		90	85-115		
Arsenic	91.1	2.00	"	100		91	85-115		
Selenium	466	2.00	"	500		93	85-115		
Molybdenum	95.5	1.00	"	100		95	85-115		
Silver	94.0	1.00	"	100		94	85-115		
Cadmium	97.1	0.200	"	100		97	85-115		
Antimony	97.7	1.00	"	100		98	85-115		
Barium	97.1	10.0	"	100		97	85-115		
Thallium	94.6	1.00	"	100		95	85-115		
Lead	93.8	0.200	"	100		94	85-115		

Duplicate (1508042-DUP1)

Dilution Factor: 1

Source: C150802-41

Prepared &amp; Analyzed: 08/10/15

Vanadium	< 2.00	3.00	ug/L	< 2.00					20
Chromium	1.70	2.00	"	1.57			8		20
Cobalt	1.47	0.200	"	1.58			7		20
Nickel	< 0.500	1.00	"	< 0.500					20
Copper	2.01	1.00	"	1.93			4		20
Arsenic	< 0.500	2.00	"	< 0.500					20
Selenium	< 1.00	2.00	"	< 1.00					20
Molybdenum	< 1.00	1.00	"	< 1.00					20
Silver	< 0.500	1.00	"	< 0.500					20
Cadmium	0.210	0.200	"	0.232			10		20
Antimony	< 0.500	1.00	"	< 0.500					20
Barium	39.6	10.0	"	40.5			2		20
Thallium	< 0.500	1.00	"	< 0.500					20
Lead	< 0.100	0.200	"	< 0.100					20

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

Metals (Dissolved) by EPA 200/7000 Series Methods - Quality Control

TechLaw, Inc. - ESAT Region 8

Analyte	Result	Det. Limit	Units	Spike Level	Source Result	%R	% R Limits	% D or RPD	% D or RPD Limit
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Batch 1508042 - No Lab Prep Req'd

Water

ICPMS-PE DRC-II

Matrix Spike (1508042-MS1)

Dilution Factor: 1

Source: C150802-41

Prepared &amp; Analyzed: 08/10/15

Vanadium	87.5	3.00	ug/L	100	< 2.00	87	70-130		
Chromium	88.9	2.00	"	100	1.57	87	70-130		
Cobalt	88.0	0.200	"	100	1.58	86	70-130		
Nickel	84.7	1.00	"	100	< 0.500	85	70-130		
Copper	85.9	1.00	"	100	1.93	84	70-130		
Arsenic	99.9	2.00	"	100	< 0.500	100	70-130		
Selenium	501	2.00	"	500	< 1.00	100	70-130		
Molybdenum	96.3	1.00	"	100	< 1.00	96	70-130		
Silver	89.5	1.00	"	100	< 0.500	89	70-130		
Cadmium	96.8	0.200	"	100	0.232	97	70-130		
Antimony	98.0	1.00	"	100	< 0.500	98	70-130		
Barium	133	10.0	"	100	40.5	92	70-130		
Thallium	89.8	1.00	"	100	< 0.500	90	70-130		
Lead	90.4	0.200	"	100	< 0.100	90	70-130		

Batch 1508051 - 1508042

Water

ICPMS-PE DRC-II

Serial Dilution (1508051-SRD1)

Dilution Factor: 5

Source: C150802-23

Prepared &amp; Analyzed: 08/10/15

Vanadium	< 10.0	15.0	ug/L	< 2.00					10
Chromium	< 5.00	10.0	"	1.55					10
Cobalt	0.646	1.00	"	0.653				1	10
Nickel	< 2.50	5.00	"	< 0.50					10
Copper	< 2.50	5.00	"	1.73					10
Arsenic	< 2.50	10.0	"	< 0.50					10
Selenium	< 5.00	10.0	"	< 1.00					10
Molybdenum	< 5.00	5.00	"	< 1.00					10
Silver	< 2.50	5.00	"	< 0.50					10
Cadmium	< 0.500	1.00	"	< 0.10					10
Antimony	< 2.50	5.00	"	< 0.50					10
Barium	41.5	50.0	"	41.4				0.1	10
Thallium	< 2.50	5.00	"	< 0.50					10
Lead	< 0.500	1.00	"	< 0.10					10

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

Metals (Dissolved) by EPA 200/7000 Series Methods - Quality Control

TechLaw, Inc. - ESAT Region 8

Analyte	Result	Det. Limit	Units	Spike Level	Source Result	% R	% R Limits	% D or RPD	% D or RPD Limit
Batch 1508051 - 1508042			Water				ICPMS-PE DRC-II		
Serial Dilution (1508051-SRD2)		Dilution Factor: 5		Source: C150802-41		Prepared & Analyzed: 08/10/15			
Vanadium	< 10.0	15.0	ug/L		< 2.00				10
Chromium	< 5.00	10.0	"		1.57				10
Cobalt	1.63	1.00	"		1.58			3	10
Nickel	< 2.50	5.00	"		< 0.50				10
Copper	< 2.50	5.00	"		1.93				10
Arsenic	< 2.50	10.0	"		< 0.50				10
Selenium	< 5.00	10.0	"		< 1.00				10
Molybdenum	< 5.00	5.00	"		< 1.00				10
Silver	< 2.50	5.00	"		< 0.50				10
Cadmium	< 0.500	1.00	"		0.232				10
Antimony	< 2.50	5.00	"		< 0.50				10
Barium	40.4	50.0	"		40.5			0.4	10
Thallium	< 2.50	5.00	"		< 0.50				10
Lead	< 0.500	1.00	"		< 0.10				10

## ICPOE - PE Optima

Batch 1508038 - No Lab Prep Req'd			Water	ICPOE - PE Optima
Method Blank (1508038-BLK1)		Dilution Factor: 1		Prepared: 08/09/15   Analyzed: 08/10/15
Aluminum	< 20.0	50.0	ug/L	
Beryllium	< 2.00	5.00	"	
Calcium	< 100	250	"	
Iron	< 100	250	"	
Potassium	< 250	1000	"	
Magnesium	< 100	250	"	
Manganese	< 2.00	5.00	"	
Sodium	< 250	1000	"	
Zinc	< 10.0	20.0	"	

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

Metals (Dissolved) by EPA 200/7000 Series Methods - Quality Control

TechLaw, Inc. - ESAT Region 8

Analyte	Result	Det. Limit	Units	Spike Level	Source Result	%R	% R Limits	% D or RPD	% D or RPD Limit
Batch 1508038 - No Lab Prep Req'd				<i>Water</i>			ICPOE - PE Optima		
Method Blank Spike (1508038-BS1)		Dilution Factor: 1		Prepared: 08/09/15 Analyzed: 08/10/15					
Aluminum	9985	50.0	ug/L	10100		99	85-115		
Beryllium	98.66	5.00	"	100		99	85-115		
Calcium	10080	250	"	10100		100	85-115		
Iron	10070	250	"	10100		100	85-115		
Potassium	10190	1000	"	10100		101	85-115		
Magnesium	10050	250	"	10100		99	85-115		
Manganese	98.15	5.00	"	100		98	85-115		
Sodium	10050	1000	"	10100		100	85-115		
Zinc	100.6	20.0	"	100		101	85-115		
Duplicate (1508038-DUP1)		Dilution Factor: 1		Source: C150802-23			Prepared: 08/09/15 Analyzed: 08/10/15		
Aluminum	35.17	50.0	ug/L		42.68			19	20
Beryllium	< 2.00	5.00	"		< 2.00				20
Calcium	53430	250	"		53310			0.2	20
Iron	< 100	250	"		< 100				20
Potassium	1904	1000	"		1867			2	20
Magnesium	7577	250	"		7497			1	20
Manganese	102.6	5.00	"		101.5			1	20
Sodium	10520	1000	"		10520			0.04	20
Zinc	20.46	20.0	"		22.81			11	20
Matrix Spike (1508038-MS1)		Dilution Factor: 1		Source: C150802-23			Prepared: 08/09/15 Analyzed: 08/10/15		
Aluminum	10280	50.0	ug/L	10100	42.68	101	70-130		
Beryllium	99.60	5.00	"	100	< 2.00	100	70-130		
Calcium	62190	250	"	10100	53310	88	70-130		
Iron	10270	250	"	10100	< 100	102	70-130		
Potassium	12370	1000	"	10100	1867	104	70-130		
Magnesium	17530	250	"	10100	7497	99	70-130		
Manganese	199.0	5.00	"	100	101.5	97	70-130		
Sodium	20620	1000	"	10100	10520	100	70-130		
Zinc	118.6	20.0	"	100	22.81	96	70-130		

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

Metals (Dissolved) by EPA 200/7000 Series Methods - Quality Control

TechLaw, Inc. - ESAT Region 8

Analyte	Result	Det. Limit	Units	Spike Level	Source Result	%R	% R Limits	% D or RPD	% D or RPD Limit
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Batch 1508038 - No Lab Prep Req'd

Water

ICPOE - PE Optima

Matrix Spike (1508038-MS2)

Dilution Factor: 1

Source: C150802-26

Prepared: 08/09/15 Analyzed: 08/10/15

Aluminum	10120	50.0	ug/L	10100	75.60	99	70-130		
Beryllium	99.33	5.00	"	100	< 2.00	99	70-130		
Calcium	58900	250	"	10100	50670	81	70-130		
Iron	10080	250	"	10100	< 100	100	70-130		
Potassium	12040	1000	"	10100	1774	102	70-130		
Magnesium	17020	250	"	10100	7266	97	70-130		
Manganese	179.0	5.00	"	100	81.85	97	70-130		
Sodium	19610	1000	"	10100	9758	98	70-130		
Zinc	105.9	20.0	"	100	< 10.0	106	70-130		

Batch 1508041 - No Lab Prep Req'd

Water

ICPOE - PE Optima

Method Blank (1508041-BLK1)

Dilution Factor: 1

Prepared &amp; Analyzed: 08/10/15

Aluminum	< 20.0	50.0	ug/L						
Beryllium	< 2.00	5.00	"						
Calcium	< 100	250	"						
Iron	< 100	250	"						
Potassium	< 250	1000	"						
Magnesium	< 100	250	"						
Manganese	< 2.00	5.00	"						
Sodium	< 250	1000	"						
Zinc	< 10.0	20.0	"						

Method Blank Spike (1508041-BS1)

Dilution Factor: 1

Prepared &amp; Analyzed: 08/10/15

Aluminum	9997	50.0	ug/L	10100		99	85-115		
Beryllium	98.43	5.00	"	100		98	85-115		
Calcium	10070	250	"	10100		100	85-115		
Iron	10040	250	"	10100		99	85-115		
Potassium	10210	1000	"	10100		101	85-115		
Magnesium	10030	250	"	10100		99	85-115		
Manganese	97.34	5.00	"	100		97	85-115		
Sodium	10080	1000	"	10100		100	85-115		
Zinc	99.87	20.0	"	100		100	85-115		

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

Metals (Dissolved) by EPA 200/7000 Series Methods - Quality Control

TechLaw, Inc. - ESAT Region 8

Analyte	Result	Det. Limit	Units	Spike Level	Source Result	%R	%R Limits	%D or RPD	%D or RPD Limit
Batch 1508041 - No Lab Prep Req'd			Water				ICPOE - PE Optima		
Duplicate (1508041-DUP1)		Dilution Factor: 1	Source: C150802-41		Prepared & Analyzed: 08/10/15				
Aluminum	24.39	50.0	ug/L		< 20.0				20
Beryllium	< 2.00	5.00	"		< 2.00				20
Calcium	51610	250	"		52020			0.8	20
Iron	< 100	250	"		< 100				20
Potassium	1813	1000	"		1799			0.8	20
Magnesium	7039	250	"		6986			0.8	20
Manganese	145.2	5.00	"		145.6			0.3	20
Sodium	9948	1000	"		10010			0.6	20
Zinc	66.15	20.0	"		65.97			0.3	20
Matrix Spike (1508041-MS1)		Dilution Factor: 1	Source: C150802-41		Prepared & Analyzed: 08/10/15				
Aluminum	10060	50.0	ug/L	10100	< 20.0	100	70-130		
Beryllium	98.70	5.00	"	100	< 2.00	99	70-130		
Calcium	60530	250	"	10100	52020	84	70-130		
Iron	10090	250	"	10100	< 100	100	70-130		
Potassium	12100	1000	"	10100	1799	102	70-130		
Magnesium	16880	250	"	10100	6986	98	70-130		
Manganese	241.9	5.00	"	100	145.6	96	70-130		
Sodium	19620	1000	"	10100	10010	95	70-130		
Zinc	161.5	20.0	"	100	65.97	96	70-130		
Batch 1508049 - 1508041			Water				ICPOE - PE Optima		
Serial Dilution (1508049-SRD1)		Dilution Factor: 5	Source: C150802-23		Prepared: 08/09/15 Analyzed: 08/10/15				
Aluminum	< 100	250	ug/L		42.68				10
Beryllium	< 10.0	25.0	"		< 2.00				10
Calcium	52210	1250	"		53310			2	10
Iron	< 500	1250	"		< 100.00				10
Potassium	1987	5000	"		1867			6	10
Magnesium	7501	1250	"		7497			0.06	10
Manganese	101.2	25.0	"		101.5			0.3	10
Sodium	10410	5000	"		10520			1	10
Zinc	< 50.0	100	"		22.81				10



Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

Metals (Dissolved) by EPA 200/7000 Series Methods - Quality Control

TechLaw, Inc. - ESAT Region 8

Analyte	Result	Det. Limit	Units	Spike Level	Source Result	%R	%R Limits	%D or RPD	%D or RPD Limit
Batch 1508049 - 1508041			Water				ICPOE - PE Optima		
Serial Dilution (1508049-SRD2)		Dilution Factor: 5		Source: C150802-41		Prepared & Analyzed: 08/10/15			
Aluminum	< 100	250	ug/L		< 20.00				10
Beryllium	< 10.0	25.0	"		< 2.00				10
Calcium	50680	1250	"		52020			3	10
Iron	< 500	1250	"		< 100.00				10
Potassium	1781	5000	"		1799			1	10
Magnesium	6947	1250	"		6986			0.6	10
Manganese	144.9	25.0	"		145.6			0.5	10
Sodium	9829	5000	"		10010			2	10
Zinc	65.34	100	"		65.97			1	10

NOTE: %R = % Recovery, %R limits do not apply when sample levels exceed 4x the spike level.  
RPD = Relative Percent Difference %D = % Difference. DL = Detection Limit for QC sample

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

Metals (Total Recov) by EPA 200/7000 Series Methods - Quality Control

TechLaw, Inc. - ESAT Region 8

Analyte	Result	Det. Limit	Units	Spike Level	Source Result	%R	% R Limits	% D or RPD	% D or RPD Limit
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## ICPMS-PE DRC-II

Batch 1508043 - 200.2 - TR Metals

Water

ICPMS-PE DRC-II

## Method Blank (1508043-BLK2)

Dilution Factor: 5

Prepared &amp; Analyzed: 08/10/15

Vanadium	< 10.0	15.0	ug/L
Chromium	< 5.00	10.0	"
Cobalt	< 0.500	1.00	"
Nickel	< 2.50	5.00	"
Copper	< 2.50	5.00	"
Arsenic	< 2.50	10.0	"
Selenium	< 5.00	10.0	"
Molybdenum	< 5.00	5.00	"
Silver	< 2.50	5.00	"
Cadmium	< 0.500	1.00	"
Antimony	< 2.50	5.00	"
Barium	< 25.0	50.0	"
Thallium	< 2.50	5.00	"
Lead	< 0.500	1.00	"

## Duplicate (1508043-DUP2)

Dilution Factor: 5

Source: C150802-22

Prepared &amp; Analyzed: 08/10/15

Vanadium	< 10.0	15.0	ug/L	< 10.0		20
Chromium	< 5.00	10.0	"	< 5.00		20
Cobalt	< 0.500	1.00	"	< 0.500		20
Nickel	< 2.50	5.00	"	< 2.50		20
Copper	14.81	5.00	"	13.84	7	20
Arsenic	2.770	10.0	"	< 2.50		20
Selenium	< 5.00	10.0	"	< 5.00		20
Molybdenum	< 5.00	5.00	"	< 5.00		20
Silver	< 2.50	5.00	"	< 2.50		20
Cadmium	< 0.500	1.00	"	< 0.500		20
Antimony	< 2.50	5.00	"	< 2.50		20
Barium	48.24	50.0	"	47.93	0.6	20
Thallium	< 2.50	5.00	"	< 2.50		20
Lead	42.72	1.00	"	34.14	22	20

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

Metals (Total Recov) by EPA 200/7000 Series Methods - Quality Control

TechLaw, Inc. - ESAT Region 8

Analyte	Result	Det. Limit	Units	Spike Level	Source Result	%R	% R Limits	% D or RPD	% D or RPD Limit
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Batch 1508043 - 200.2 - TR Metals

Water

ICPMS-PE DRC-II

Matrix Spike (1508043-MS2)

Dilution Factor: 5

Source: C150802-22

Prepared &amp; Analyzed: 08/10/15

Vanadium	276.7	15.0	ug/L	300	< 10.0	92	70-130		
Chromium	367.0	10.0	"	400	< 5.00	92	70-130		
Cobalt	186.1	1.00	"	200	< 0.500	93	70-130		
Nickel	455.9	5.00	"	500	< 2.50	91	70-130		
Copper	285.6	5.00	"	300	13.84	91	70-130		
Arsenic	765.2	10.0	"	800	< 2.50	96	70-130		
Selenium	1926	10.0	"	2000	< 5.00	96	70-130		
Molybdenum	394.3	5.00	"	400	< 5.00	99	70-130		
Silver	72.21	5.00	"	75.0	< 2.50	96	70-130		
Cadmium	197.2	1.00	"	200	< 0.500	99	70-130		
Antimony	774.7	5.00	"	800	< 2.50	97	70-130		
Barium	231.1	50.0	"	200	47.93	92	70-130		
Thallium	1904	5.00	"	2000	< 2.50	95	70-130		
Lead	1016	1.00	"	1000	34.14	98	70-130		

Matrix Spike (1508043-MS4)

Dilution Factor: 5

Source: C150802-25

Prepared &amp; Analyzed: 08/10/15

Vanadium	272.8	15.0	ug/L	300	< 10.0	91	70-130		
Chromium	353.2	10.0	"	400	< 5.00	88	70-130		
Cobalt	179.5	1.00	"	200	< 0.500	90	70-130		
Nickel	443.2	5.00	"	500	< 2.50	89	70-130		
Copper	281.2	5.00	"	300	9.126	91	70-130		
Arsenic	747.4	10.0	"	800	2.678	93	70-130		
Selenium	1901	10.0	"	2000	< 5.00	95	70-130		
Molybdenum	381.1	5.00	"	400	< 5.00	95	70-130		
Silver	69.01	5.00	"	75.0	< 2.50	92	70-130		
Cadmium	190.0	1.00	"	200	< 0.500	95	70-130		
Antimony	760.2	5.00	"	800	< 2.50	95	70-130		
Barium	225.0	50.0	"	200	43.27	91	70-130		
Thallium	1831	5.00	"	2000	11.93	91	70-130		
Lead	962.4	1.00	"	1000	19.70	94	70-130		

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

Metals (Total Recov) by EPA 200/7000 Series Methods - Quality Control

TechLaw, Inc. - ESAT Region 8

Analyte	Result	Det. Limit	Units	Spike Level	Source Result	%R	% R Limits	% D or RPD	% D or RPD Limit
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Batch 1508043 - 200.2 - TR Metals

Water

ICPMS-PE DRC-II

Reference (1508043-SRM2)

Dilution Factor: 2

Prepared &amp; Analyzed: 08/10/15

Vanadium	914.3	60.0	ug/L	1000		91	85-115		
Chromium	919.2	40.0	"	1000		92	85-115		
Cobalt	940.3	4.00	"	1000		94	85-115		
Nickel	916.7	20.0	"	1000		92	85-115		
Copper	941.9	20.0	"	1000		94	85-115		
Arsenic	1942	40.0	"	2000		97	85-115		
Selenium	897.2	40.0	"	1000		90	85-115		
Molybdenum	958.8	20.0	"	1000		96	85-115		
Silver	235.5	20.0	"	250		94	85-115		
Cadmium	991.7	4.00	"	1000		99	85-115		
Antimony	1923	20.0	"	2000		96	85-115		
Barium	923.2	200	"	1000		92	85-115		
Thallium	4646	20.0	"	5000		93	85-115		
Lead	1889	4.00	"	2000		94	85-115		

Batch 1508046 - 200.2 - TR Metals

Water

ICPMS-PE DRC-II

Method Blank (1508046-BLK2)

Dilution Factor: 5

Prepared &amp; Analyzed: 08/10/15

Vanadium	< 10.0	15.0	ug/L						
Chromium	< 5.00	10.0	"						
Cobalt	< 0.500	1.00	"						
Nickel	< 2.50	5.00	"						
Copper	< 2.50	5.00	"						
Arsenic	< 2.50	10.0	"						
Selenium	< 5.00	10.0	"						
Molybdenum	< 5.00	5.00	"						
Silver	< 2.50	5.00	"						
Cadmium	< 0.500	1.00	"						
Antimony	< 2.50	5.00	"						
Barium	< 25.0	50.0	"						
Thallium	< 2.50	5.00	"						
Lead	< 0.500	1.00	"						

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

Metals (Total Recov) by EPA 200/7000 Series Methods - Quality Control

TechLaw, Inc. - ESAT Region 8

Analyte	Result	Det. Limit	Units	Spike Level	Source Result	% R	% R Limits	% D or RPD	% D or RPD Limit
Batch 1508046 - 200.2 - TR Metals			Water				ICPMS-PE DRC-II		
Duplicate (1508046-DUP2)		Dilution Factor: 5		Source: C150802-40		Prepared & Analyzed: 08/10/15			
Vanadium	< 10.0	15.0	ug/L		< 10.0				20
Chromium	< 5.00	10.0	"		< 5.00				20
Cobalt	0.5506	1.00	"		0.6074			10	20
Nickel	< 2.50	5.00	"		< 2.50				20
Copper	16.22	5.00	"		15.81			3	20
Arsenic	3.860	10.0	"		< 2.50				20
Selenium	< 5.00	10.0	"		< 5.00				20
Molybdenum	< 5.00	5.00	"		< 5.00				20
Silver	< 2.50	5.00	"		< 2.50				20
Cadmium	< 0.500	1.00	"		< 0.500				20
Antimony	< 2.50	5.00	"		< 2.50				20
Barium	45.27	50.0	"		44.12			3	20
Thallium	< 2.50	5.00	"		< 2.50				20
Lead	38.59	1.00	"		37.64			2	20
Matrix Spike (1508046-MS2)		Dilution Factor: 5		Source: C150802-40		Prepared & Analyzed: 08/10/15			
Vanadium	282.0	15.0	ug/L	300	< 10.0	94	70-130		
Chromium	361.1	10.0	"	400	< 5.00	90	70-130		
Cobalt	187.7	1.00	"	200	0.6074	94	70-130		
Nickel	455.1	5.00	"	500	< 2.50	91	70-130		
Copper	294.6	5.00	"	300	15.81	93	70-130		
Arsenic	756.4	10.0	"	800	< 2.50	95	70-130		
Selenium	1915	10.0	"	2000	< 5.00	96	70-130		
Molybdenum	385.1	5.00	"	400	< 5.00	96	70-130		
Silver	70.32	5.00	"	75.0	< 2.50	94	70-130		
Cadmium	194.4	1.00	"	200	< 0.500	97	70-130		
Antimony	760.6	5.00	"	800	< 2.50	95	70-130		
Barium	220.8	50.0	"	200	44.12	88	70-130		
Thallium	1810	5.00	"	2000	< 2.50	90	70-130		
Lead	973.2	1.00	"	1000	37.64	94	70-130		

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

Metals (Total Recov) by EPA 200/7000 Series Methods - Quality Control

TechLaw, Inc. - ESAT Region 8

Analyte	Result	Det. Limit	Units	Spike Level	Source Result	%R	% R Limits	% D or RPD	% D or RPD Limit
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Batch 1508046 - 200.2 - TR Metals

Water

ICPMS-PE DRC-II

Reference (1508046-SRM2)

Dilution Factor: 2

Prepared &amp; Analyzed: 08/10/15

Vanadium	931.2	60.0	ug/L	1000		93	85-115		
Chromium	916.3	40.0	"	1000		92	85-115		
Cobalt	950.9	4.00	"	1000		95	85-115		
Nickel	930.5	20.0	"	1000		93	85-115		
Copper	934.2	20.0	"	1000		93	85-115		
Arsenic	1941	40.0	"	2000		97	85-115		
Selenium	961.8	40.0	"	1000		96	85-115		
Molybdenum	953.9	20.0	"	1000		95	85-115		
Silver	237.3	20.0	"	250		95	85-115		
Cadmium	963.7	4.00	"	1000		96	85-115		
Antimony	1901	20.0	"	2000		95	85-115		
Barium	916.4	200	"	1000		92	85-115		
Thallium	4568	20.0	"	5000		91	85-115		
Lead	1880	4.00	"	2000		94	85-115		

Batch 1508057 - 1508046

Water

ICPMS-PE DRC-II

Serial Dilution (1508057-SRD1)

Dilution Factor: 2

Source: C150802-22

Prepared &amp; Analyzed: 08/10/15

Vanadium	< 50.0	75.0	ug/L	< 10.00					10
Chromium	< 25.0	50.0	"	< 5.00					10
Cobalt	< 2.50	5.00	"	< 0.50					10
Nickel	< 12.5	25.0	"	< 2.50					10
Copper	12.68	25.0	"	13.84			9		10
Arsenic	< 12.5	50.0	"	< 2.50					10
Selenium	< 25.0	50.0	"	< 5.00					10
Molybdenum	< 25.0	25.0	"	< 5.00					200
Silver	< 12.5	25.0	"	< 2.50					10
Cadmium	< 2.50	5.00	"	< 0.50					10
Antimony	< 12.5	25.0	"	< 2.50					10
Barium	< 125	250	"	47.93					10
Thallium	< 12.5	25.0	"	< 2.50					10
Lead	34.27	5.00	"	34.14			0.4		10

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

Metals (Total Recov) by EPA 200/7000 Series Methods - Quality Control

TechLaw, Inc. - ESAT Region 8

Analyte	Result	Det. Limit	Units	Spike Level	Source Result	% R	% R Limits	% D or RPD	% D or RPD Limit
Batch 1508057 - 1508046			Water				ICPMS-PE DRC-II		
Serial Dilution (1508057-SRD2)		Dilution Factor: 2		Source: C150802-40		Prepared & Analyzed: 08/10/15			
Vanadium	< 50.0	75.0	ug/L		< 10.00				10
Chromium	< 25.0	50.0	"		< 5.00				10
Cobalt	< 2.50	5.00	"		0.6074				10
Nickel	< 12.5	25.0	"		< 2.50				10
Copper	18.52	25.0	"		15.81			16	10
Arsenic	< 12.5	50.0	"		< 2.50				10
Selenium	< 25.0	50.0	"		< 5.00				10
Molybdenum	< 25.0	25.0	"		< 5.00				200
Silver	< 12.5	25.0	"		< 2.50				10
Cadmium	< 2.50	5.00	"		< 0.50				10
Antimony	< 12.5	25.0	"		< 2.50				10
Barium	< 125	250	"		44.12				10
Thallium	< 12.5	25.0	"		< 2.50				10
Lead	35.25	5.00	"		37.64			7	10

## ICPOE - PE Optima

Batch 1508043 - 200.2 - TR Metals			Water	ICPOE - PE Optima
Method Blank (1508043-BLK1)		Dilution Factor: 1		Prepared & Analyzed: 08/10/15
Aluminum	< 20.0	50.0	ug/L	
Beryllium	< 2.00	5.00	"	
Calcium	< 100	250	"	
Iron	< 100	250	"	
Potassium	< 250	1000	"	
Magnesium	< 100	250	"	
Manganese	< 2.00	5.00	"	
Sodium	< 250	1000	"	
Zinc	< 10.0	20.0	"	

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

Metals (Total Recov) by EPA 200/7000 Series Methods - Quality Control

TechLaw, Inc. - ESAT Region 8

Analyte	Result	Det. Limit	Units	Spike Level	Source Result	%R	%R Limits	%D or RPD	%D or RPD Limit
Batch 1508043 - 200.2 - TR Metals				Water		ICPOE - PE Optima			
Duplicate (1508043-DUP1)		Dilution Factor: 1		Source: C150802-22		Prepared & Analyzed: 08/10/15			
Aluminum	888.5	50.0	ug/L		810.6			9	20
Beryllium	< 2.00	5.00	"		< 2.00				20
Calcium	54460	250	"		55210			1	20
Iron	3096	250	"		2925			6	20
Potassium	2217	1000	"		2255			2	20
Magnesium	7739	250	"		7940			3	20
Manganese	163.9	5.00	"		150.6			8	20
Sodium	10760	1000	"		10870			0.9	20
Zinc	94.79	20.0	"		91.53			3	20
Matrix Spike (1508043-MS1)		Dilution Factor: 1		Source: C150802-22		Prepared & Analyzed: 08/10/15			
Aluminum	2967	50.0	ug/L	2000	810.6	108	70-130		
Beryllium	203.4	5.00	"	200	< 2.00	102	70-130		
Calcium	55820	250	"	1000	55210	61	70-130		
Iron	6180	250	"	3000	2925	108	70-130		
Potassium	12240	1000	"	10000	2255	100	70-130		
Magnesium	9855	250	"	2000	7940	96	70-130		
Manganese	359.2	5.00	"	200	150.6	104	70-130		
Sodium	13720	1000	"	3000	10870	95	70-130		
Zinc	294.0	20.0	"	200	91.53	101	70-130		
Matrix Spike (1508043-MS3)		Dilution Factor: 1		Source: C150802-25		Prepared & Analyzed: 08/10/15			
Aluminum	2507	50.0	ug/L	2000	496.7	101	70-130		
Beryllium	202.2	5.00	"	200	< 2.00	101	70-130		
Calcium	52110	250	"	1000	51600	51	70-130		
Iron	4508	250	"	3000	1409	103	70-130		
Potassium	11740	1000	"	10000	1938	98	70-130		
Magnesium	9330	250	"	2000	7363	98	70-130		
Manganese	321.0	5.00	"	200	120.8	100	70-130		
Sodium	12750	1000	"	3000	9933	94	70-130		
Zinc	267.6	20.0	"	200	66.75	100	70-130		



Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

Metals (Total Recov) by EPA 200/7000 Series Methods - Quality Control

TechLaw, Inc. - ESAT Region 8

Analyte	Result	Det. Limit	Units	Spike Level	Source Result	% R	% R Limits	% D or RPD	% D or RPD Limit
Batch 1508043 - 200.2 - TR Metals			Water				ICPOE - PE Optima		
Reference (1508043-SRM1)		Dilution Factor: 1				Prepared & Analyzed: 08/10/15			
Aluminum	1027	50.0	ug/L	1000		103	85-115		
Beryllium	1007	5.00	"	1000		101	85-115		
Calcium	1002	250	"	1000		100	85-115		
Iron	1009	250	"	1000		101	85-115		
Potassium	5097	1000	"	5000		102	85-115		
Magnesium	1007	250	"	1000		101	85-115		
Manganese	1030	5.00	"	1000		103	85-115		
Sodium	1039	1000	"	1000		104	85-115		
Zinc	1032	20.0	"	1000		103	85-115		
Batch 1508046 - 200.2 - TR Metals			Water				ICPOE - PE Optima		
Method Blank (1508046-BLK1)		Dilution Factor: 1				Prepared & Analyzed: 08/10/15			
Aluminum	< 20.0	50.0	ug/L						
Beryllium	< 2.00	5.00	"						
Calcium	< 100	250	"						
Iron	< 100	250	"						
Potassium	< 250	1000	"						
Magnesium	< 100	250	"						
Manganese	< 2.00	5.00	"						
Sodium	< 250	1000	"						
Zinc	< 10.0	20.0	"						
Duplicate (1508046-DUP1)		Dilution Factor: 1		Source: C150802-40		Prepared & Analyzed: 08/10/15			
Aluminum	876.7	50.0	ug/L		803.4			9	20
Beryllium	< 2.00	5.00	"		< 2.00				20
Calcium	52100	250	"		50060			4	20
Iron	3024	250	"		2916			4	20
Potassium	2097	1000	"		1989			5	20
Magnesium	7278	250	"		6954			5	20
Manganese	183.6	5.00	"		186.1			1	20
Sodium	10190	1000	"		9693			5	20
Zinc	120.6	20.0	"		124.4			3	20

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

Metals (Total Recov) by EPA 200/7000 Series Methods - Quality Control

TechLaw, Inc. - ESAT Region 8

Analyte	Result	Det. Limit	Units	Spike Level	Source Result	% R	% R Limits	% D or RPD	% D or RPD Limit
Batch 1508046 - 200.2 - TR Metals			Water				ICPOE - PE Optima		
Matrix Spike (1508046-MS1)		Dilution Factor: 1		Source: C150802-40		Prepared & Analyzed: 08/10/15			
Aluminum	2957	50.0	ug/L	2000	803.4	108	70-130		
Beryllium	197.0	5.00	"	200	< 2.00	99	70-130		
Calcium	53820	250	"	1000	50060	377	70-130		
Iron	6181	250	"	3000	2916	109	70-130		
Potassium	12130	1000	"	10000	1989	101	70-130		
Magnesium	9486	250	"	2000	6954	127	70-130		
Manganese	382.6	5.00	"	200	186.1	98	70-130		
Sodium	13320	1000	"	3000	9693	121	70-130		
Zinc	313.2	20.0	"	200	124.4	94	70-130		
Reference (1508046-SRM1)		Dilution Factor: 1				Prepared & Analyzed: 08/10/15			
Aluminum	1004	50.0	ug/L	1000		100	85-115		
Beryllium	987.6	5.00	"	1000		99	85-115		
Calcium	976.9	250	"	1000		98	85-115		
Iron	987.5	250	"	1000		99	85-115		
Potassium	4914	1000	"	5000		98	85-115		
Magnesium	982.9	250	"	1000		98	85-115		
Manganese	1015	5.00	"	1000		101	85-115		
Sodium	995.4	1000	"	1000		100	85-115		
Zinc	1016	20.0	"	1000		102	85-115		
Batch 1508056 - 1508046			Water				ICPOE - PE Optima		
Serial Dilution (1508056-SRD1)		Dilution Factor: 5		Source: C150802-22		Prepared & Analyzed: 08/10/15			
Aluminum	849.0	250	ug/L		810.6			5	10
Beryllium	< 10.0	25.0	"		< 2.00				10
Calcium	53600	1250	"		55210			3	10
Iron	2852	1250	"		2925			3	10
Potassium	2501	5000	"		2255			10	10
Magnesium	7741	1250	"		7940			3	10
Manganese	155.0	25.0	"		150.6			3	10
Sodium	10630	5000	"		10870			2	10
Zinc	99.46	100	"		91.53			8	10

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

Metals (Total Recov) by EPA 200/7000 Series Methods - Quality Control

TechLaw, Inc. - ESAT Region 8

Analyte	Result	Det. Limit	Units	Spike Level	Source Result	%R	%R Limits	%D or RPD	%D or RPD Limit
Batch 1508056 - 1508046			Water				ICPOE - PE Optima		
Serial Dilution (1508056-SRD2)		Dilution Factor: 5		Source: C150802-40		Prepared & Analyzed: 08/10/15			
Aluminum	836.9	250	ug/L		803.4			4	10
Beryllium	< 10.0	25.0	"		< 2.00				10
Calcium	51120	1250	"		50060			2	10
Iron	3069	1250	"		2916			5	10
Potassium	2268	5000	"		1989			13	10
Magnesium	7174	1250	"		6954			3	10
Manganese	182.0	25.0	"		186.1			2	10
Sodium	10040	5000	"		9693			4	10
Zinc	130.0	100	"		124.4			4	10

NOTE: %R = % Recovery, %R limits do not apply when sample levels exceed 4x the spike level.  
RPD = Relative Percent Difference %D = % Difference. DL = Detection Limit for QC sample

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

Mercury only (Total) by EPA 245.1 / 7470A Method - Quality Control

TechLaw, Inc. - ESAT Region 8

Analyte	Result	Det. Limit	Units	Spike Level	Source Result	% R	% R Limits	% D or RPD	% D or RPD Limit
CVAA FIMS - PE									
Batch 1508045 - EPA 245.1/245.2 Prep			Water				CVAA FIMS - PE		
Method Blank (1508045-BLK1)		Dilution Factor: 1				Prepared & Analyzed: 08/10/15			
Mercury	< 0.0500	0.100	ug/L						
Method Blank (1508045-BLK2)		Dilution Factor: 1				Prepared & Analyzed: 08/10/15			
Mercury	< 0.0500	0.100	ug/L						
Method Blank Spike (1508045-BS1)		Dilution Factor: 1				Prepared & Analyzed: 08/10/15			
Mercury	7.36	0.100	ug/L	7.50		98	85-115		
Method Blank Spike (1508045-BS2)		Dilution Factor: 1				Prepared & Analyzed: 08/10/15			
Mercury	7.55	0.100	ug/L	7.50		101	85-115		
Duplicate (1508045-DUP1)		Dilution Factor: 1		Source: C150802-01		Prepared & Analyzed: 08/10/15			
Mercury	0.157	0.100	ug/L		0.149			5	20
Duplicate (1508045-DUP2)		Dilution Factor: 1		Source: C150802-61		Prepared & Analyzed: 08/10/15			
Mercury	< 0.0500	0.100	ug/L		< 0.0500				20
Matrix Spike (1508045-MS1)		Dilution Factor: 1		Source: C150802-01		Prepared & Analyzed: 08/10/15			
Mercury	2.78	0.100	ug/L	7.50	0.149	35	75-125		
Matrix Spike (1508045-MS2)		Dilution Factor: 1		Source: C150802-31		Prepared & Analyzed: 08/10/15			
Mercury	7.44	0.100	ug/L	7.50	< 0.0500	99	75-125		
Matrix Spike (1508045-MS3)		Dilution Factor: 1		Source: C150802-61		Prepared & Analyzed: 08/10/15			
Mercury	7.90	0.100	ug/L	7.50	< 0.0500	105	75-125		
Batch 1508050 - 1508045			Water				CVAA FIMS - PE		
Instrument Blank (1508050-IBL1)		Dilution Factor: 1				Prepared & Analyzed: 08/10/15			
Mercury	< 0.0500	0.100	ug/L						

NOTE: %R = % Recovery, %R limits do not apply when sample levels exceed 4x the spike level.  
 RPD = Relative Percent Difference %D = % Difference, DL = Detection Limit for QC sample

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

Classical Chemistry by EPA/ASTM/APHA Methods - Quality Control

TechLaw, Inc. - ESAT Region 8

Analyte	Result	Det. Limit	Units	Spike Level	Source Result	%R	% R Limits	% D or RPD	% D or RPD Limit
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**Mettler AT**

Batch 1508047 - No Prep Req

*Water***Mettler AT****Method Blank (1508047-BLK1)**

Dilution Factor: 1

Prepared &amp; Analyzed: 08/10/15

Total Alkalinity &lt; 5.00

10.0

mg CaCO<sub>3</sub> /  
L**Duplicate (1508047-DUP1)**

Dilution Factor: 1

Source: C150802-66

Prepared &amp; Analyzed: 08/10/15

Total Alkalinity 76.9

10.0

mg CaCO<sub>3</sub> /  
L

76.7

0.2

20

**Reference (1508047-SRM1)**

Dilution Factor: 1

Prepared &amp; Analyzed: 08/10/15

Total Alkalinity 76.9

10.0

mg CaCO<sub>3</sub> /  
L

78.1

99

69.3-86.9

**None - Gravimetric**

Batch 1508040 - No Prep Req

*Water***None - Gravimetric****Method Blank (1508040-BLK1)**

Dilution Factor: 1

Prepared: 08/10/15 Analyzed: 08/11/15

Total Suspended Solids &lt; 10

10

mg/L

**Method Blank (1508040-BLK2)**

Dilution Factor: 1

Prepared: 08/10/15 Analyzed: 08/11/15

Total Suspended Solids &lt; 10

10

mg/L

**Method Blank (1508040-BLK3)**

Dilution Factor: 1

Prepared: 08/10/15 Analyzed: 08/11/15

Total Suspended Solids &lt; 10

10

mg/L

**Duplicate (1508040-DUP1)**

Dilution Factor: 1

Source: C150802-03

Prepared: 08/10/15 Analyzed: 08/11/15

Total Suspended Solids 612

10

mg/L

612

0

20

**Duplicate (1508040-DUP2)**

Dilution Factor: 1

Source: C150802-33

Prepared: 08/10/15 Analyzed: 08/11/15

Total Suspended Solids &lt; 10

10

mg/L

&lt; 10

20

**Duplicate (1508040-DUP3)**

Dilution Factor: 1

Source: C150802-63

Prepared: 08/10/15 Analyzed: 08/11/15

Total Suspended Solids &lt; 10

10

mg/L

&lt; 10

20

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

## Certificate of Analysis

TDF #: [none]

Classical Chemistry by EPA/ASTM/APHA Methods - Quality Control

TechLaw, Inc. - ESAT Region 8

Analyte	Result	Det. Limit	Units	Spike Level	Source Result	%R	%R Limits	%D or RPD	%D or RPD Limit
Batch 1508040 - No Prep Req			Water				None - Gravimetric		
Reference (1508040-SRM1)		Dilution Factor: 1				Prepared: 08/10/15 Analyzed: 08/11/15			
Total Suspended Solids	132	10	mg/L	150		88	75-125		
Batch 1508044 - No Prep Req			Water				None - Gravimetric		
Method Blank (1508044-BLK1)		Dilution Factor: 1				Prepared: 08/10/15 Analyzed: 08/11/15			
Total Dissolved Solids	< 10	10	mg/L						
Method Blank (1508044-BLK2)		Dilution Factor: 1				Prepared: 08/10/15 Analyzed: 08/11/15			
Total Dissolved Solids	< 10	10	mg/L						
Method Blank (1508044-BLK3)		Dilution Factor: 1				Prepared: 08/10/15 Analyzed: 08/11/15			
Total Dissolved Solids	< 10	10	mg/L						
Duplicate (1508044-DUP1)		Dilution Factor: 1		Source: C150802-03		Prepared: 08/10/15 Analyzed: 08/11/15			
Total Dissolved Solids	316	10	mg/L		310			2	20
Duplicate (1508044-DUP2)		Dilution Factor: 1		Source: C150802-33		Prepared: 08/10/15 Analyzed: 08/11/15			
Total Dissolved Solids	166	10	mg/L		160			4	20
Duplicate (1508044-DUP3)		Dilution Factor: 1		Source: C150802-63		Prepared: 08/10/15 Analyzed: 08/11/15			
Total Dissolved Solids	160	10	mg/L		156			3	20
Reference (1508044-SRM1)		Dilution Factor: 1				Prepared: 08/10/15 Analyzed: 08/11/15			
Total Dissolved Solids	4390	10	mg/L	4500		98	75-125		

NOTE: %R = % Recovery, %R limits do not apply when sample levels exceed 4x the spike level.  
 RPD = Relative Percent Difference %D = % Difference, DL = Detection Limit for QC sample

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Certificate of Analysis

TDF #: [none]

TechLaw Inc, ESAT Region8  
INORGANIC ANALYSES DATA SHEET  
Initial and Continuing Calibration Blanks

Analytical Method: EPA 310.1

Analysis Name: WC - Alkalinity

Instrument: Mettler AT

Work Order: Nu C150802

Analytical Sequence: **Total**

Concentration Units: mg CaCO3 / L

Blank criteria = +/- 5x analyte MDL (+/- PQL)

Analyte	Initial Calibration Blank (1 & 2)	Continuing Calibration Blanks				Method Blank (Batch ID)		PQL
		1	2	3	4	1508047-BLK1	NA	
Total Alkalinity		0.19				0.00	NA	10.00
		5	6	7	8			

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Certificate of Analysis

TDF #: [none]

TechLaw Inc, ESAT Region8  
**INORGANIC ANALYSES DATA SHEET**  
 Intial and Continuing Calibration Blanks

Analytical Method: 200.7Analysis Name: ICPOE Diss. MetalsInstrument: ICPOE - PE OptimaWork Order: Nu C150802Analytical Sequence: 1508049 **Dissolved**Concentration Units: ug/L

Blank criteria = +/- 5x analyte MDL (+/- PQL)

Analyte	Initial Calibration Blank (1 & 2)	Continuing Calibration Blanks				Method Blank (Batch ID)		PQL
Aluminum	2.95	1	2	3	4	1508041-BLK1	NA	50.00
		-1.25	2.33	2.73	0.59	-1.91	NA	
		5	6	7	8			
	2.95	1	2	3	4	1508038-BLK1	NA	50.00
		-1.25	2.33	2.73	0.59	5.04	NA	
		5	6	7	8			
Beryllium	0.11	1	2	3	4	1508038-BLK1	NA	5.00
		0.08	0.05	0.07	0.09	0.00	NA	
		5	6	7	8			
	0.11	1	2	3	4	1508041-BLK1	NA	5.00
		0.08	0.05	0.07	0.09	-0.02	NA	
		5	6	7	8			
Calcium	0.12	1	2	3	4	1508038-BLK1	NA	250.00
		1.47	1.53	-0.35	-1.12	8.39	NA	
		5	6	7	8			
	0.12	1	2	3	4	1508041-BLK1	NA	250.00
		1.47	1.53	-0.35	-1.12	-6.96	NA	
		5	6	7	8			
Iron	-4.48	1	2	3	4	1508038-BLK1	NA	250.00
		44.06	19.75	30.69	25.15	44.17	NA	
		5	6	7	8			
	-4.48	1	2	3	4	1508041-BLK1	NA	250.00
		44.06	19.75	30.69	25.15	6.04	NA	
		5	6	7	8			



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Certificate of Analysis

TDF #: [none]

TechLaw Inc, ESAT Region8  
**INORGANIC ANALYSES DATA SHEET**  
 Intial and Continuing Calibration Blanks

Analytical Method: 200.7Analysis Name: ICPOE Diss. MetalsInstrument: ICPOE - PE OptimaWork Order: Nu C150802Analytical Sequence: 1508049 **Dissolved**Concentration Units: ug/L

Blank criteria = +/- 5x analyte MDL (+/- PQL)

Analyte	Initial Calibration Blank (1 & 2)	Continuing Calibration Blanks				Method Blank (Batch ID)		PQL
Potassium	36.93	1	2	3	4	1508038-BLK1	NA	1,000.00
		39.32	31.56	50.93	42.84	38.79	NA	
		5	6	7	8			
	36.93	1	2	3	4	1508041-BLK1	NA	1,000.00
		39.32	31.56	50.93	42.84	22.84	NA	
		5	6	7	8			
Magnesium	0.85	1	2	3	4	1508041-BLK1	NA	250.00
		3.21	2.69	2.56	1.94	-0.55	NA	
		5	6	7	8			
	0.85	1	2	3	4	1508038-BLK1	NA	250.00
		3.21	2.69	2.56	1.94	7.91	NA	
		5	6	7	8			
Manganese	0.11	1	2	3	4	1508038-BLK1	NA	5.00
		0.14	0.11	0.10	0.12	-0.05	NA	
		5	6	7	8			
	0.11	1	2	3	4	1508041-BLK1	NA	5.00
		0.14	0.11	0.10	0.12	-0.04	NA	
		5	6	7	8			
Sodium	4.73	1	2	3	4	1508038-BLK1	NA	1,000.00
		5.60	6.85	7.81	6.52	5.87	NA	
		5	6	7	8			
	4.73	1	2	3	4	1508041-BLK1	NA	1,000.00
		5.60	6.85	7.81	6.52	4.00	NA	
		5	6	7	8			

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Certificate of Analysis

TDF #: [none]

TechLaw Inc, ESAT Region8  
**INORGANIC ANALYSES DATA SHEET**  
 Intial and Continuing Calibration Blanks

Analytical Method: 200.7Analysis Name: ICPOE Diss. MetalsInstrument: ICPOE - PE OptimaWork Order: Nu C150802Analytical Sequence: 1508049 **Dissolved**Concentration Units: ug/L

Blank criteria = +/- 5x analyte MDL (+/- PQL)

Analyte	Initial Calibration Blank (1 & 2)	Continuing Calibration Blanks				Method Blank (Batch ID)		PQL
Zinc	1.35	1	2	3	4	1508041-BLK1	NA	20.00
		0.53	0.52	1.96	1.98	0.62	NA	
		5	6	7	8			
	1.35	1	2	3	4	1508038-BLK1	NA	20.00
		0.53	0.52	1.96	1.98	-0.47	NA	
		5	6	7	8			

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Certificate of Analysis

TDF #: [none]

TechLaw Inc, ESAT Region8  
INORGANIC ANALYSES DATA SHEET  
Intial and Continuing Calibration Blanks

Analytical Method: 245.1Analysis Name: TM Mercury 245.1Instrument: CVAA FIMS - PEWork Order: Nu C150802Analytical Sequence: 1508050 **Total**Concentration Units: ug/L

Blank criteria = +/- 5x analyte MDL (+/- PQL)

Analyte	Initial Calibration Blank (1 & 2)	Continuing Calibration Blanks				Method Blank (Batch ID)		PQL
Mercury	0.00	1	2	3	4	NA	1508045-BLK2	0.10
		0.00	0.00	0.01	0.01	NA	0.00	
		5	6	7	8			
	0.00	1	2	3	4	1508045-BLK1	NA	0.10
		0.00	0.00	0.01	0.01	0.00	NA	
		5	6	7	8			

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Certificate of Analysis

TDF #: [none]

TechLaw Inc, ESAT Region8  
**INORGANIC ANALYSES DATA SHEET**  
 Intial and Continuing Calibration Blanks

Analytical Method: 200.8Analysis Name: ICPMS Diss. MetalsInstrument: ICPMS-PE DRC-IIWork Order: Nu C150802Analytical Sequence: 1508051 **Dissolved**Concentration Units: ug/L

Blank criteria = +/- 5x analyte MDL (+/- PQL)

Analyte	Initial Calibration Blank (1 & 2)	Continuing Calibration Blanks				Method Blank (Batch ID)		PQL
Vanadium	-0.18	1	2	3	4	1508039-BLK1	NA	3.00
		-0.08	0.01	-0.05	0.01	-0.07	NA	
		5	6	7	8			
	-0.18	1	2	3	4	1508042-BLK1	NA	3.00
		-0.08	0.01	-0.05	0.01	-0.17	NA	
		5	6	7	8			
Chromium	-0.20	1	2	3	4	1508042-BLK1	NA	2.00
		-0.12	-0.18	-0.19	-0.19	-0.16	NA	
		5	6	7	8			
	-0.20	1	2	3	4	1508039-BLK1	NA	2.00
		-0.12	-0.18	-0.19	-0.19	-0.23	NA	
		5	6	7	8			
Cobalt	0.03	1	2	3	4	1508039-BLK1	NA	0.20
		0.02	0.03	0.03	0.02	-0.01	NA	
		5	6	7	8			
	0.03	1	2	3	4	1508042-BLK1	NA	0.20
		0.02	0.03	0.03	0.02	-0.02	NA	
		5	6	7	8			
Nickel	0.06	1	2	3	4	1508039-BLK1	NA	1.00
		0.04	0.04	0.03	0.03	-0.03	NA	
		5	6	7	8			
	0.06	1	2	3	4	1508042-BLK1	NA	1.00
		0.04	0.04	0.03	0.03	-0.03	NA	
		5	6	7	8			

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Certificate of Analysis

TDF #: [none]

TechLaw Inc, ESAT Region8  
**INORGANIC ANALYSES DATA SHEET**  
 Intial and Continuing Calibration Blanks

Analytical Method: 200.8Analysis Name: ICPMS Diss. MetalsInstrument: ICPMS-PE DRC-IIWork Order: Nu C150802Analytical Sequence: 1508051 **Dissolved**Concentration Units: ug/L

Blank criteria = +/- 5x analyte MDL (+/- PQL)

Analyte	Initial Calibration Blank (1 & 2)	Continuing Calibration Blanks				Method Blank (Batch ID)		PQL
Copper	0.00	1	2	3	4	1508039-BLK1	NA	1.00
		0.06	0.02	0.04	-0.03	-0.13	NA	
	5	6	7	8				
	0.00	1	2	3	4	1508042-BLK1	NA	1.00
		0.06	0.02	0.04	-0.03	-0.12	NA	
	5	6	7	8				
Arsenic	-0.08	1	2	3	4	1508042-BLK1	NA	2.00
		-0.01	0.07	-0.05	0.14	-0.08	NA	
	5	6	7	8				
	-0.08	1	2	3	4	1508039-BLK1	NA	2.00
		-0.01	0.07	-0.05	0.14	0.04	NA	
	5	6	7	8				
Selenium	-0.25	1	2	3	4	1508042-BLK1	NA	2.00
		-0.02	0.00	-0.17	-0.01	-0.02	NA	
	5	6	7	8				
	-0.25	1	2	3	4	1508039-BLK1	NA	2.00
		-0.02	0.00	-0.17	-0.01	-0.31	NA	
	5	6	7	8				
Molybdenum	0.05	1	2	3	4	1508042-BLK1	NA	1.00
		0.05	0.04	0.05	0.05	-0.01	NA	
	5	6	7	8				
	0.05	1	2	3	4	1508039-BLK1	NA	1.00
		0.05	0.04	0.05	0.05	0.08	NA	
	5	6	7	8				

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Certificate of Analysis

TDF #: [none]

TechLaw Inc, ESAT Region8  
**INORGANIC ANALYSES DATA SHEET**  
 Intial and Continuing Calibration Blanks

Analytical Method: 200.8Analysis Name: ICPMS Diss. MetalsInstrument: ICPMS-PE DRC-IIWork Order: Nu C150802Analytical Sequence: 1508051 **Dissolved**Concentration Units: ug/L

Blank criteria = +/- 5x analyte MDL (+/- PQL)

Analyte	Initial Calibration Blank (1 & 2)	Continuing Calibration Blanks				Method Blank (Batch ID)		PQL
Silver	0.02	1	2	3	4	1508039-BLK1	NA	1.00
		0.02	0.02	0.01	0.02	0.00	NA	
		5	6	7	8			
	0.02	1	2	3	4	1508042-BLK1	NA	1.00
		0.02	0.02	0.01	0.02	-0.01	NA	
		5	6	7	8			
Cadmium	-0.01	1	2	3	4	1508039-BLK1	NA	0.20
		-0.01	0.03	0.02	0.02	-0.02	NA	
		5	6	7	8			
	-0.01	1	2	3	4	1508042-BLK1	NA	0.20
		-0.01	0.03	0.02	0.02	-0.03	NA	
		5	6	7	8			
Antimony	0.10	1	2	3	4	1508039-BLK1	NA	1.00
		0.21	0.20	0.20	0.18	0.09	NA	
		5	6	7	8			
	0.10	1	2	3	4	1508042-BLK1	NA	1.00
		0.21	0.20	0.20	0.18	0.06	NA	
		5	6	7	8			
Barium	0.02	1	2	3	4	1508042-BLK1	NA	10.00
		0.06	0.06	0.04	0.03	-0.02	NA	
		5	6	7	8			
	0.02	1	2	3	4	1508039-BLK1	NA	10.00
		0.06	0.06	0.04	0.03	-0.03	NA	
		5	6	7	8			

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Certificate of Analysis

TDF #: [none]

TechLaw Inc, ESAT Region8  
**INORGANIC ANALYSES DATA SHEET**  
 Intial and Continuing Calibration Blanks

Analytical Method: 200.8Analysis Name: ICPMS Diss. MetalsInstrument: ICPMS-PE DRC-IIWork Order: Nu C150802Analytical Sequence: 1508051 **Dissolved**Concentration Units: ug/L

Blank criteria = +/- 5x analyte MDL (+/- PQL)

Analyte	Initial Calibration Blank (1 & 2)	Continuing Calibration Blanks				Method Blank (Batch ID)		PQL
Thallium	0.02	1	2	3	4	1508039-BLK1	NA	1.00
		0.01	0.01	-0.01	-0.02	-0.05	NA	
		5	6	7	8			
	0.02	1	2	3	4	1508042-BLK1	NA	1.00
		0.01	0.01	-0.01	-0.02	-0.07	NA	
		5	6	7	8			
Lead	0.00	1	2	3	4	1508042-BLK1	NA	0.20
		-0.01	-0.01	-0.02	-0.02	-0.05	NA	
		5	6	7	8			
	0.00	1	2	3	4	1508039-BLK1	NA	0.20
		-0.01	-0.01	-0.02	-0.02	-0.03	NA	
		5	6	7	8			

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Certificate of Analysis

TDF #: [none]

TechLaw Inc, ESAT Region8  
**INORGANIC ANALYSES DATA SHEET**  
 Intial and Continuing Calibration Blanks

Analytical Method: 200.7

Analysis Name: ICPOE Tot. Rec. Metals

Instrument: ICPOE - PE Optima

Work Order: Nu C150802

Analytical Sequence: 1508056 Total Recoverable

Concentration Units: ug/L

Blank criteria = +/- 5x analyte MDL (+/- PQL)

Analyte	Initial Calibration Blank (1 & 2)	Continuing Calibration Blanks				Method Blank (Batch ID)		PQL
Aluminum	4.24	1	2	3	4	1508046-BLK1	NA	50.00
		3.98	1.11	-0.96	3.56	-1.35	NA	
		5	6	7	8			
	4.24	1	2	3	4	1508043-BLK1	NA	50.00
		3.98	1.11	-0.96	3.56	-4.16	NA	
		5	6	7	8			
Beryllium	0.09	1	2	3	4	1508043-BLK1	NA	5.00
		0.08	0.02	0.04	0.06	-0.08	NA	
		5	6	7	8			
	0.09	1	2	3	4	1508046-BLK1	NA	5.00
		0.08	0.02	0.04	0.06	-0.03	NA	
		5	6	7	8			
Calcium	1.61	1	2	3	4	1508046-BLK1	NA	250.00
		2.27	2.47	-0.14	-1.07	3.53	NA	
		5	6	7	8			
	1.61	1	2	3	4	1508043-BLK1	NA	250.00
		2.27	2.47	-0.14	-1.07	13.24	NA	
		5	6	7	8			
Iron	-13.06	1	2	3	4	1508043-BLK1	NA	250.00
		5.49	-8.25	-7.04	7.90	-2.54	NA	
		5	6	7	8			
	-13.06	1	2	3	4	1508046-BLK1	NA	250.00
		5.49	-8.25	-7.04	7.90	-13.03	NA	
		5	6	7	8			



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Certificate of Analysis

TDF #: [none]

TechLaw Inc, ESAT Region8  
**INORGANIC ANALYSES DATA SHEET**  
 Intial and Continuing Calibration Blanks

Analytical Method: 200.7Analysis Name: ICPOE Tot. Rec. MetalsInstrument: ICPOE - PE OptimaWork Order: Nu C150802Analytical Sequence: 1508056 **Total Recoverable**Concentration Units: ug/L

Blank criteria = +/- 5x analyte MDL (+/- PQL)

Analyte	Initial Calibration Blank (1 & 2)	Continuing Calibration Blanks				Method Blank (Batch ID)		PQL
Potassium	56.93	1	2	3	4	1508043-BLK1	NA	1,000.00
		89.06	80.67	76.96	65.41	121.00	NA	
	5	6	7	8				
	56.93	1	2	3	4	1508046-BLK1	NA	1,000.00
		89.06	80.67	76.96	65.41	66.24	NA	
	5	6	7	8				
Magnesium	0.68	1	2	3	4	1508043-BLK1	NA	250.00
		2.53	1.51	1.86	1.23	2.26	NA	
	5	6	7	8				
	0.68	1	2	3	4	1508046-BLK1	NA	250.00
		2.53	1.51	1.86	1.23	-4.85	NA	
	5	6	7	8				
Manganese	0.10	1	2	3	4	1508046-BLK1	NA	5.00
		0.06	0.07	-0.03	-0.06	-0.04	NA	
	5	6	7	8				
	0.10	1	2	3	4	1508043-BLK1	NA	5.00
		0.06	0.07	-0.03	-0.06	-0.09	NA	
	5	6	7	8				
Sodium	1.40	1	2	3	4	1508043-BLK1	NA	1,000.00
		6.38	3.89	8.77	12.23	31.94	NA	
	5	6	7	8				
	1.40	1	2	3	4	1508046-BLK1	NA	1,000.00
		6.38	3.89	8.77	12.23	20.15	NA	
	5	6	7	8				

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Certificate of Analysis

TDF #: [none]

TechLaw Inc, ESAT Region8  
INORGANIC ANALYSES DATA SHEET  
Initial and Continuing Calibration Blanks

Analytical Method: 200.7Analysis Name: ICPOE Tot. Rec. MetalsInstrument: ICPOE - PE OptimaWork Order: Nu C150802Analytical Sequence: 1508056 **Total Recoverable**Concentration Units: ug/L

Blank criteria = +/- 5x analyte MDL (+/- PQL)

Analyte	Initial Calibration Blank (1 & 2)	Continuing Calibration Blanks				Method Blank (Batch ID)		PQL
Zinc	0.25	1	2	3	4	1508043-BLK1	NA	20.00
		1.35	1.08	0.66	1.28	2.30	NA	
	5	6	7	8				
	0.25	1	2	3	4	1508046-BLK1	NA	20.00
		1.35	1.08	0.66	1.28	2.42	NA	
	5	6	7	8				

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Certificate of Analysis

TDF #: [none]

TechLaw Inc, ESAT Region8  
**INORGANIC ANALYSES DATA SHEET**  
 Intial and Continuing Calibration Blanks

Analytical Method: 200.8

Analysis Name: ICPMS Tot. Rec. Metals

Instrument: ICPMS-PE DRC-II

Work Order: Nu C150802

Analytical Sequence: 1508057 Total Recoverable

Concentration Units: ug/L

Blank criteria = +/- 5x analyte MDL (+/- PQL)

Analyte	Initial Calibration Blank (1 & 2)	Continuing Calibration Blanks				Method Blank (Batch ID)		PQL
Vanadium	0.06	1	2	3	4	NA	1508046-BLK2	3.00
		0.04	0.00	0.04	0.01	NA	0.31	
		5	6	7	8			
	0.06	1	2	3	4	NA	1508043-BLK2	3.00
		0.04	0.00	0.04	0.01	NA	0.12	
		5	6	7	8			
Chromium	-0.17	1	2	3	4	NA	1508046-BLK2	2.00
		-0.27	-0.27	-0.22	-0.22	NA	-0.01	
		5	6	7	8			
	-0.17	1	2	3	4	NA	1508043-BLK2	2.00
		-0.27	-0.27	-0.22	-0.22	NA	0.01	
		5	6	7	8			
Cobalt	0.01	1	2	3	4	NA	1508046-BLK2	0.20
		0.01	0.01	0.02	0.03	NA	-0.01	
		5	6	7	8			
	0.01	1	2	3	4	NA	1508043-BLK2	0.20
		0.01	0.01	0.02	0.03	NA	0.02	
		5	6	7	8			
Nickel	0.01	1	2	3	4	NA	1508043-BLK2	1.00
		-0.01	0.01	0.04	0.06	NA	0.03	
		5	6	7	8			
	0.01	1	2	3	4	NA	1508046-BLK2	1.00
		-0.01	0.01	0.04	0.06	NA	-0.01	
		5	6	7	8			

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

TechLaw Inc, ESAT Region8  
**INORGANIC ANALYSES DATA SHEET**  
 Intial and Continuing Calibration Blanks

Analytical Method: 200.8Analysis Name: ICPMS Tot. Rec. MetalsInstrument: ICPMS-PE DRC-IIWork Order: Nu C150802Analytical Sequence: 1508057 **Total Recoverable**Concentration Units: ug/L

Blank criteria = +/- 5x analyte MDL (+/- PQL)

Analyte	Initial Calibration Blank (1 & 2)	Continuing Calibration Blanks				Method Blank (Batch ID)		PQL
Copper	0.01	1	2	3	4	NA	1508043-BLK2	1.00
		0.02	0.02	0.02	0.01	NA	0.07	
	5	6	7	8				
	0.01	1	2	3	4	NA	1508046-BLK2	1.00
		0.02	0.02	0.02	0.01	NA	0.02	
	5	6	7	8				
Arsenic	-0.01	1	2	3	4	NA	1508046-BLK2	2.00
		0.04	-0.12	-0.12	-0.19	NA	-0.14	
	5	6	7	8				
	-0.01	1	2	3	4	NA	1508043-BLK2	2.00
		0.04	-0.12	-0.12	-0.19	NA	-0.08	
	5	6	7	8				
Selenium	0.11	1	2	3	4	NA	1508043-BLK2	2.00
		0.03	-0.02	0.01	0.08	NA	0.18	
	5	6	7	8				
	0.11	1	2	3	4	NA	1508046-BLK2	2.00
		0.03	-0.02	0.01	0.08	NA	-0.20	
	5	6	7	8				
Molybdenum	0.04	1	2	3	4	NA	1508046-BLK2	1.00
		0.03	0.04	0.05	0.05	NA	0.00	
	5	6	7	8				
	0.04	1	2	3	4	NA	1508043-BLK2	1.00
		0.03	0.04	0.05	0.05	NA	0.23	
	5	6	7	8				

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

TechLaw Inc, ESAT Region8  
**INORGANIC ANALYSES DATA SHEET**  
 Intial and Continuing Calibration Blanks

Analytical Method: 200.8

Analysis Name: ICPMS Tot. Rec. Metals

Instrument: ICPMS-PE DRC-II

Work Order: Nu C150802

Analytical Sequence: 1508057 Total Recoverable

Concentration Units: ug/L

Blank criteria = +/- 5x analyte MDL (+/- PQL)

Analyte	Initial Calibration Blank (1 & 2)	Continuing Calibration Blanks				Method Blank (Batch ID)		PQL
Silver	0.03	1	2	3	4	NA	1508043-BLK2	1.00
		0.03	0.02	0.02	0.04	NA	0.02	
		5	6	7	8			
	0.03	1	2	3	4	NA	1508046-BLK2	1.00
		0.03	0.02	0.02	0.04	NA	0.00	
		5	6	7	8			
Cadmium	0.02	1	2	3	4	NA	1508043-BLK2	0.20
		0.02	0.02	0.03	0.05	NA	0.01	
		5	6	7	8			
	0.02	1	2	3	4	NA	1508046-BLK2	0.20
		0.02	0.02	0.03	0.05	NA	0.01	
		5	6	7	8			
Antimony	0.10	1	2	3	4	NA	1508043-BLK2	1.00
		0.20	0.19	0.18	0.21	NA	-0.01	
		5	6	7	8			
	0.10	1	2	3	4	NA	1508046-BLK2	1.00
		0.20	0.19	0.18	0.21	NA	0.01	
		5	6	7	8			
Barium	0.02	1	2	3	4	NA	1508046-BLK2	10.00
		0.04	0.03	0.02	0.01	NA	0.00	
		5	6	7	8			
	0.02	1	2	3	4	NA	1508043-BLK2	10.00
		0.04	0.03	0.02	0.01	NA	0.28	
		5	6	7	8			

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

TechLaw Inc, ESAT Region8  
**INORGANIC ANALYSES DATA SHEET**  
 Intial and Continuing Calibration Blanks

Analytical Method: 200.8Analysis Name: ICPMS Tot. Rec. MetalsInstrument: ICPMS-PE DRC-IIWork Order: Nu C150802Analytical Sequence: 1508057 **Total Recoverable**Concentration Units: ug/L

Blank criteria = +/- 5x analyte MDL (+/- PQL)

Analyte	Initial Calibration Blank (1 & 2)	Continuing Calibration Blanks				Method Blank (Batch ID)		PQL
Thallium	0.02	1	2	3	4	NA	1508046-BLK2	1.00
		0.21	0.05	0.21	0.09	NA	0.01	
		5	6	7	8			
	0.02	1	2	3	4	NA	1508043-BLK2	1.00
		0.21	0.05	0.21	0.09	NA	0.00	
		5	6	7	8			
Lead	0.01	1	2	3	4	NA	1508043-BLK2	0.20
		0.03	0.02	0.03	0.03	NA	0.01	
		5	6	7	8			
	0.01	1	2	3	4	NA	1508046-BLK2	0.20
		0.03	0.02	0.03	0.03	NA	0.00	
		5	6	7	8			

TDF #: [none]

## TechLaw, Inc. - ESAT Region 8

## Initial and Continuing Calibration Verification Results

Mettler AT

Method: EPA 310.1

Analysis Name: WC - Alkalinity

Sequence: 1508048

Work Order: C150802

Units: mg CaCO3 / L

Total Analyte	Initial (ICV1, ICV2)			Continuing Calibration Verification Standards (CCVs)								
	True	Found	%R	True	Found	%R	True	Found	%R	True	Found	%R
Total Alkalinity				1			2			3		
				100	98.7	98.7						
				4			5			6		
				7			8			9		

Metals - ICV &amp; CCV %R Criteria = 90 - 110%, Classical Chemistry %R Criteria -ICV = 90 - 110%R, CCV = 80 - 120%R.

TDF #: [none]

## TechLaw, Inc. - ESAT Region 8

## Initial and Continuing Calibration Verification Results

ICPOE - PE Optima

Method: 200.7

Analysis Name: ICPOE Diss. Metals

Sequence: 1508049

Work Order: C150802

Units: ug/L

Dissolved Analyte	Initial (ICV1, ICV2)			Continuing Calibration Verification Standards (CCVs)								
	True	Found	%R	True	Found	%R	True	Found	%R	True	Found	%R
Aluminum	12500	12500	100.0		1			2			3	
				12500	12400	99.2	12500	12440	99.5	12500	12160	97.3
					4			5			6	
				12500	12240	97.9						
					7			8			9	
Beryllium	500	509.0	101.8		1			2			3	
				500	503.4	100.7	500	504.7	100.9	500	508.3	101.7
					4			5			6	
				500	508.9	101.8						
					7			8			9	
Calcium	12500	12850	102.8		1			2			3	
				12500	12610	100.9	12500	12640	101.1	12500	12410	99.3
					4			5			6	
				12500	12590	100.7						
					7			8			9	
Iron	12500	12700	101.6		1			2			3	
				12500	12490	99.9	12500	12500	100.0	12500	12390	99.1
					4			5			6	
				12500	12570	100.6						
					7			8			9	
Magnesium	12500	12620	101.0		1			2			3	
				12500	12570	100.6	12500	12590	100.7	12500	12320	98.6
					4			5			6	
				12500	12400	99.2						
					7			8			9	
Manganese	1000	1026	102.6		1			2			3	
				1000	1016	101.6	1000	1016	101.6	1000	1027	102.7
					4			5			6	
				1000	1022	102.2						
					7			8			9	



TDF #: [none]

## TechLaw, Inc. - ESAT Region 8

## Initial and Continuing Calibration Verification Results

ICPOE - PE Optima

Method: 200.7

Analysis Name: ICPOE Diss. Metals

Sequence: 1508049

Work Order: C150802

Units: ug/L

Dissolved Analyte	Initial (ICV1, ICV2)			Continuing Calibration Verification Standards (CCVs)								
	True	Found	%R	True	Found	%R	True	Found	%R	True	Found	%R
Potassium	25000	25000	100.0	1			2			3		
				25000	24860	99.4	25000	24930	99.7	25000	24450	97.8
				4			5			6		
				25000	24570	98.3						
				7			8			9		
Sodium	12500	12500	100.0	1			2			3		
				12500	12440	99.5	12500	12490	99.9	12500	12220	97.8
				4			5			6		
				12500	12290	98.3						
				7			8			9		
Zinc	2500	2565	102.6	1			2			3		
				2500	2497	99.9	2500	2511	100.4	2500	2544	101.8
				4			5			6		
				2500	2556	102.2						
				7			8			9		

Metals - ICV &amp; CCV %R Criteria = 90 - 110%, Classical Chemistry %R Criteria -ICV = 90 - 110%R, CCV = 80 - 120%R.

TDF #: [none]

## TechLaw, Inc. - ESAT Region 8

## Initial and Continuing Calibration Verification Results

CVAA FIMS - PE

Method: 245.1

Analysis Name: TM\_Mercury 245.1

Sequence: 1508050

Work Order: C150802

Units: ug/L

Total Analyte	Initial (ICV1, ICV2)			Continuing Calibration Verification Standards (CCVs)								
	True	Found	%R	True	Found	%R	True	Found	%R	True	Found	%R
Mercury	5.00	5.05	101.0	1			2			3		
				5.00	4.95	99.0	5.00	4.92	98.4	5.00	5.13	102.6
				4			5			6		
		5.00			5.17	103.4						
		7			8			9				

Metals - ICV &amp; CCV %R Criteria = 90 - 110%, Classical Chemistry %R Criteria -ICV = 90 - 110%R, CCV = 80 - 120%R.

TDF #: [none]

## TechLaw, Inc. - ESAT Region 8

## Initial and Continuing Calibration Verification Results

ICPMS-PE DRC-II

Method: 200.8

Analysis Name: ICPMS Diss. Metals

Sequence: 1508051

Work Order: C150802

Units: ug/L

Dissolved Analyte	Initial (ICV1, ICV2)			Continuing Calibration Verification Standards (CCVs)								
	True	Found	%R	True	Found	%R	True	Found	%R	True	Found	%R
Antimony	50.0	50.8	101.6		1			2			3	
				50.0	48.7	97.4	50.0	49.5	99.0	50.0	50.5	101.0
					4			5			6	
				50.0	49.8	99.6						
					7			8			9	
Arsenic	50.0	50.2	100.4		1			2			3	
				50.0	49.4	98.8	50.0	49.7	99.4	50.0	50.8	101.6
					4			5			6	
				50.0	49.3	98.6						
					7			8			9	
Barium	50.0	50.1	100.2		1			2			3	
				50.0	50.5	101.0	50.0	50.7	101.4	50.0	50.5	101.0
					4			5			6	
				50.0	51.3	102.6						
					7			8			9	
Cadmium	50.0	48.8	97.6		1			2			3	
				50.0	49.5	99.0	50.0	50.3	100.6	50.0	51.1	102.2
					4			5			6	
				50.0	50.6	101.2						
					7			8			9	
Chromium	50.0	48.9	97.8		1			2			3	
				50.0	49.4	98.8	50.0	48.2	96.4	50.0	49.1	98.2
					4			5			6	
				50.0	47.3	94.6						
					7			8			9	
Cobalt	50.0	49.2	98.4		1			2			3	
				50.0	50.0	100.0	50.0	49.6	99.2	50.0	49.4	98.8
					4			5			6	
				50.0	48.4	96.8						
					7			8			9	

TDF #: [none]

## TechLaw, Inc. - ESAT Region 8

## Initial and Continuing Calibration Verification Results

ICPMS-PE DRC-II

Method: 200.8

Analysis Name: ICPMS Diss. Metals

Sequence: 1508051

Work Order: C150802

Units: ug/L

Dissolved Analyte	Initial (ICV1, ICV2)			Continuing Calibration Verification Standards (CCVs)								
	True	Found	%R	True	Found	%R	True	Found	%R	True	Found	%R
Copper	50.0	49.5	99.0		1			2			3	
				50.0	50.1	100.2	50.0	48.4	96.8	50.0	49.1	98.2
					4			5			6	
				50.0	48.7	97.4						
					7			8			9	
Lead	50.0	50.2	100.4		1			2			3	
				50.0	49.4	98.8	50.0	49.7	99.4	50.0	50.2	100.4
					4			5			6	
				50.0	49.4	98.8						
					7			8			9	
Molybdenum	50.0	49.8	99.6		1			2			3	
				50.0	51.6	103.2	50.0	51.7	103.4	50.0	52.3	104.6
					4			5			6	
				50.0	51.0	102.0						
					7			8			9	
Nickel	50.0	50.1	100.2		1			2			3	
				50.0	49.7	99.4	50.0	48.2	96.4	50.0	49.6	99.2
					4			5			6	
				50.0	47.8	95.6						
					7			8			9	
Selenium	50.0	50.8	101.6		1			2			3	
				50.0	50.2	100.4	50.0	49.1	98.2	50.0	50.1	100.2
					4			5			6	
				50.0	49.5	99.0						
					7			8			9	
Silver	50.0	49.5	99.0		1			2			3	
				50.0	49.5	99.0	50.0	50.4	100.8	50.0	50.9	101.8
					4			5			6	
				50.0	50.6	101.2						
					7			8			9	

TDF #: [none]

## TechLaw, Inc. - ESAT Region 8

## Initial and Continuing Calibration Verification Results

ICPMS-PE DRC-II

Method: 200.8

Analysis Name: ICPMS Diss. Metals

Sequence: 1508051

Work Order: C150802

Units: ug/L

Dissolved Analyte	Initial (ICV1, ICV2)			Continuing Calibration Verification Standards (CCVs)								
	True	Found	%R	True	Found	%R	True	Found	%R	True	Found	%R
Thallium	50.0	49.7	99.4		1			2			3	
				50.0	49.3	98.6	50.0	49.2	98.4	50.0	49.8	99.6
					4			5			6	
				50.0	49.4	98.8						
					7			8			9	
Vanadium	50.0	48.7	97.4		1			2			3	
				50.0	49.3	98.6	50.0	48.8	97.6	50.0	48.6	97.2
					4			5			6	
				50.0	48.9	97.8						
					7			8			9	

Metals - ICV &amp; CCV %R Criteria = 90 - 110%, Classical Chemistry %R Criteria -ICV = 90 - 110%R, CCV = 80 - 120%R.

TDF #: [none]

## TechLaw, Inc. - ESAT Region 8

## Initial and Continuing Calibration Verification Results

pH Meter

Method: 150.1

Analysis Name: WC-pH

Sequence: 1508053

Work Order: C150802

Units: pH Units

WET Analyte	Initial (ICV1, ICV2)			Continuing Calibration Verification Standards (CCVs)								
	True	Found	%R	True	Found	%R	True	Found	%R	True	Found	%R
pH				1			2			3		
				4			5			6		
				7			8			9		

Metals - ICV &amp; CCV %R Criteria = 90 - 110%, Classical Chemistry %R Criteria -ICV = 90 - 110%R, CCV = 80 - 120%R.

TDF #: [none]

## TechLaw, Inc. - ESAT Region 8

## Initial and Continuing Calibration Verification Results

ICPOE - PE Optima

Method: 200.7

Analysis Name: ICPOE Tot. Rec. Metals

Sequence: 1508056

Work Order: C150802

Units: ug/L

Total Recoverable Analyte	Initial (ICV1, ICV2)			Continuing Calibration Verification Standards (CCVs)								
	True	Found	%R	True	Found	%R	True	Found	%R	True	Found	%R
Aluminum	12500	12450	99.6		1			2			3	
				12500	12300	98.4	12500	12340	98.7	12500	12550	100.4
					4			5			6	
				12500	12400	99.2						
					7			8			9	
Beryllium	500	501.9	100.4		1			2			3	
				500	507.8	101.6	500	511.4	102.3	500	492.2	98.4
					4			5			6	
				500	490.3	98.1						
					7			8			9	
Calcium	12500	12460	99.7		1			2			3	
				12500	12520	100.2	12500	12650	101.2	12500	12280	98.2
					4			5			6	
				12500	12140	97.1						
					7			8			9	
Iron	12500	12580	100.6		1			2			3	
				12500	12540	100.3	12500	12630	101.0	12500	12500	100.0
					4			5			6	
				12500	12590	100.7						
					7			8			9	
Magnesium	12500	12530	100.2		1			2			3	
				12500	12430	99.4	12500	12490	99.9	12500	12600	100.8
					4			5			6	
				12500	12490	99.9						
					7			8			9	
Manganese	1000	1010	101.0		1			2			3	
				1000	1023	102.3	1000	1029	102.9	1000	991.3	99.1
					4			5			6	
				1000	987.8	98.8						
					7			8			9	

TDF #: [none]

## TechLaw, Inc. - ESAT Region 8

## Initial and Continuing Calibration Verification Results

ICPOE - PE Optima

Method: 200.7

Analysis Name: ICPOE Tot. Rec. Metals

Sequence: 1508056

Work Order: C150802

Units: ug/L

Total Recoverable Analyte	Initial (ICV1, ICV2)			Continuing Calibration Verification Standards (CCVs)								
	True	Found	%R	True	Found	%R	True	Found	%R	True	Found	%R
Potassium	25000	24850	99.4	1			2			3		
				25000	24550	98.2	25000	24600	98.4	25000	24860	99.4
				4			5			6		
				25000	24590	98.4						
				7			8			9		
Sodium	12500	12400	99.2	1			2			3		
				12500	12320	98.6	12500	12370	99.0	12500	12500	100.0
				4			5			6		
				12500	12340	98.7						
				7			8			9		
Zinc	2500	2558	102.3	1			2			3		
				2500	2599	104.0	2500	2633	105.3	2500	2499	100.0
				4			5			6		
				2500	2494	99.8						
				7			8			9		

Metals - ICV &amp; CCV %R Criteria = 90 - 110%, Classical Chemistry %R Criteria -ICV = 90 - 110%R, CCV = 80 - 120%R.



TDF #: [none]

## TechLaw, Inc. - ESAT Region 8

## Initial and Continuing Calibration Verification Results

ICPMS-PE DRC-II

Method: 200.8

Analysis Name: ICPMS Tot. Rec. Metals

Sequence: 1508057

Work Order: C150802

Units: ug/L

Total Recoverable Analyte	Initial (ICV1, ICV2)			Continuing Calibration Verification Standards (CCVs)								
	True	Found	%R	True	Found	%R	True	Found	%R	True	Found	%R
Antimony	50.0	50.77	101.5		1			2			3	
				50.0	47.50	95.0	50.0	46.88	93.8	50.0	47.33	94.7
					4			5			6	
				50.0	46.97	93.9						
					7			8			9	
Arsenic	50.0	49.62	99.2		1			2			3	
				50.0	49.64	99.3	50.0	47.04	94.1	50.0	48.27	96.5
					4			5			6	
				50.0	46.78	93.6						
					7			8			9	
Barium	50.0	49.48	99.0		1			2			3	
				50.0	50.04	100.1	50.0	47.69	95.4	50.0	47.62	95.2
					4			5			6	
				50.0	46.28	92.6						
					7			8			9	
Cadmium	50.0	50.44	100.9		1			2			3	
				50.0	49.61	99.2	50.0	49.91	99.8	50.0	49.90	99.8
					4			5			6	
				50.0	49.44	98.9						
					7			8			9	
Chromium	50.0	50.16	100.3		1			2			3	
				50.0	48.57	97.1	50.0	46.44	92.9	50.0	46.71	93.4
					4			5			6	
				50.0	47.34	94.7						
					7			8			9	
Cobalt	50.0	50.72	101.4		1			2			3	
				50.0	47.69	95.4	50.0	47.76	95.5	50.0	47.67	95.3
					4			5			6	
				50.0	48.08	96.2						
					7			8			9	

TDF #: [none]

## TechLaw, Inc. - ESAT Region 8

## Initial and Continuing Calibration Verification Results

ICPMS-PE DRC-II

Method: 200.8

Analysis Name: ICPMS Tot. Rec. Metals

Sequence: 1508057

Work Order: C150802

Units: ug/L

Total Recoverable Analyte	Initial (ICV1, ICV2)			Continuing Calibration Verification Standards (CCVs)								
	True	Found	%R	True	Found	%R	True	Found	%R	True	Found	%R
Copper	50.0	51.01	102.0		1			2			3	
				50.0	48.74	97.5	50.0	46.86	93.7	50.0	46.72	93.4
					4			5			6	
				50.0	48.07	96.1						
					7			8			9	
Lead	50.0	49.59	99.2		1			2			3	
				50.0	49.42	98.8	50.0	48.07	96.1	50.0	48.33	96.7
					4			5			6	
				50.0	47.80	95.6						
					7			8			9	
Molybdenum	50.0	50.55	101.1		1			2			3	
				50.0	50.21	100.4	50.0	50.79	101.6	50.0	50.53	101.1
					4			5			6	
				50.0	50.93	101.9						
					7			8			9	
Nickel	50.0	49.81	99.6		1			2			3	
				50.0	47.95	95.9	50.0	47.19	94.4	50.0	46.18	92.4
					4			5			6	
				50.0	47.97	95.9						
					7			8			9	
Selenium	50.0	48.31	96.6		1			2			3	
				50.0	49.87	99.7	50.0	46.00	92.0	50.0	47.43	94.9
					4			5			6	
				50.0	45.95	91.9						
					7			8			9	
Silver	50.0	50.20	100.4		1			2			3	
				50.0	48.01	96.0	50.0	49.09	98.2	50.0	48.89	97.8
					4			5			6	
				50.0	48.13	96.3						
					7			8			9	

TDF #: [none]

## TechLaw, Inc. - ESAT Region 8

## Initial and Continuing Calibration Verification Results

ICPMS-PE DRC-II

Method: 200.8

Analysis Name: ICPMS Tot. Rec. Metals

Sequence: 1508057

Work Order: C150802

Units: ug/L

Total Recoverable Analyte	Initial (ICV1, ICV2)			Continuing Calibration Verification Standards (CCVs)								
	True	Found	%R	True	Found	%R	True	Found	%R	True	Found	%R
Thallium	50.0	48.88	97.8	1			2			3		
				50.0	48.98	98.0	50.0	47.58	95.2	50.0	48.24	96.5
				4			5			6		
				50.0	47.12	94.2						
				7			8			9		
Vanadium	50.0	50.66	101.3	1			2			3		
				50.0	49.25	98.5	50.0	47.98	96.0	50.0	47.80	95.6
				4			5			6		
				50.0	47.13	94.3						
				7			8			9		

Metals - ICV &amp; CCV %R Criteria = 90 - 110%, Classical Chemistry %R Criteria - ICV = 90 - 110%R, CCV = 80 - 120%R.

TDF #: [none]

TechLaw, Inc. - ESAT Region 8  
ICP Interference Check Sample  
ICPMS-PE DRC-II

<u>Analyte</u>	<u>Check Sample</u>	<u>Result*</u>	<u>Units</u>	<u>True</u>	<u>%R</u>	<u>PQL</u>
Sequence: 1508051	Analysis: ICPMS Diss. Metals					
Antimony	IFA1	0.0	ug/L			1.00
	IFB1	0.0	ug/L			1.00
Arsenic	IFA1	-0.1	ug/L			2.00
	IFB1	20.0	ug/L	20	100	2.00
Barium	IFA1	0.0	ug/L			10.0
	IFB1	0.2	ug/L			10.0
Cadmium	IFA1	0.0	ug/L			0.200
	IFB1	20.4	ug/L	20	102	0.200
Chromium	IFA1	0.0	ug/L			2.00
	IFB1	19.3	ug/L	20	97	2.00
Cobalt	IFA1	0.0	ug/L			0.200
	IFB1	19.4	ug/L	20	97	0.200
Copper	IFA1	0.6	ug/L			1.00
	IFB1	20.2	ug/L	20	101	1.00
Lead	IFA1	0.0	ug/L			0.200
	IFB1	0.0	ug/L			0.200
Molybdenum	IFA1	198.1	ug/L	200	99	1.00
	IFB1	203.5	ug/L	200	102	1.00
Nickel	IFA1	-0.2	ug/L			1.00
	IFB1	19.6	ug/L	20	98	1.00
Selenium	IFA1	-0.4	ug/L			2.00
	IFB1	-0.5	ug/L			2.00
Silver	IFA1	0.0	ug/L			1.00
	IFB1	19.4	ug/L	20	97	1.00
Thallium	IFA1	-0.1	ug/L			1.00
	IFB1	-0.1	ug/L			1.00
Vanadium	IFA1	-0.2	ug/L			3.00
	IFB1	-0.6	ug/L			3.00

\*Criteria = 80-120%R of True Value or +/- PQL

See raw data for complete analyte list and results.

TDF #: [none]

TechLaw, Inc. - ESAT Region 8  
ICP Interference Check Sample  
ICPMS-PE DRC-II

<u>Analyte</u>	<u>Check Sample</u>	<u>Result*</u>	<u>Units</u>	<u>True</u>	<u>%R</u>	<u>PQL</u>
Sequence: 1508057 Analysis: ICPMS Tot. Rec. Metals						
Antimony	IFA1	0.0	ug/L			1.00
	IFB1	0.0	ug/L			1.00
Arsenic	IFA1	0.1	ug/L			2.00
	IFB1	20.3	ug/L	20	102	2.00
Barium	IFA1	0.0	ug/L			10.0
	IFB1	0.2	ug/L			10.0
Cadmium	IFA1	0.1	ug/L			0.200
	IFB1	20.2	ug/L	20	101	0.200
Chromium	IFA1	0.1	ug/L			2.00
	IFB1	20.2	ug/L	20	101	2.00
Cobalt	IFA1	0.0	ug/L			0.200
	IFB1	20.1	ug/L	20	100	0.200
Copper	IFA1	0.6	ug/L			1.00
	IFB1	20.8	ug/L	20	104	1.00
Lead	IFA1	0.0	ug/L			0.200
	IFB1	0.1	ug/L			0.200
Molybdenum	IFA1	203.6	ug/L	200	102	1.00
	IFB1	205.6	ug/L	200	103	1.00
Nickel	IFA1	-0.3	ug/L			1.00
	IFB1	19.2	ug/L	20	96	1.00
Selenium	IFA1	-0.3	ug/L			2.00
	IFB1	-0.4	ug/L			2.00
Silver	IFA1	0.0	ug/L			1.00
	IFB1	19.7	ug/L	20	99	1.00
Thallium	IFA1	0.0	ug/L			1.00
	IFB1	0.0	ug/L			1.00
Vanadium	IFA1	0.3	ug/L			3.00
	IFB1	-0.1	ug/L			3.00

\*Criteria = 80-120%R of True Value or +/- PQL

See raw data for complete analyte list and results.

TDF #: [none]

## TechLaw, Inc. - ESAT Region 8

## ICP Interference Check Sample

## ICPOE - PE Optima

<u>Analyte</u>	<u>Check Sample</u>	<u>Result*</u>	<u>Units</u>	<u>True</u>	<u>%R</u>	<u>PQL</u>
Sequence: 1508049	Analysis: ICPOE Diss. Metals					
Aluminum	IFA1	60,692.9	ug/L	60,000	101	50.0
	IFB1	59,888.5	ug/L	60,000	100	50.0
Beryllium	IFA1	-0.5	ug/L			5.00
	IFB1	99.4	ug/L	100	99	5.00
Calcium	IFA1	289,975.8	ug/L	300,000	97	250
	IFB1	288,132.4	ug/L	300,000	96	250
Iron	IFA1	236,081.1	ug/L	250,000	94	250
	IFB1	234,753.8	ug/L	250,000	94	250
Magnesium	IFA1	143,118.4	ug/L	150,000	95	250
	IFB1	141,998.2	ug/L	150,000	95	250
Manganese	IFA1	1.2	ug/L			5.00
	IFB1	196.0	ug/L	200	98	5.00
Potassium	IFA1	-306.8	ug/L			1000
	IFB1	20,897.7	ug/L	20,000	104	1000
Sodium	IFA1	52,053.5	ug/L	50,000	104	1000
	IFB1	51,132.6	ug/L	50,000	102	1000
Zinc	IFA1	1.2	ug/L			20.0
	IFB1	287.9	ug/L	300	96	20.0

\*Criteria = 80-120%R of True Value or +/- PQL

See raw data for complete analyte list and results.

TDF #: [none]

## TechLaw, Inc. - ESAT Region 8

## ICP Interference Check Sample

## ICPOE - PE Optima

<u>Analyte</u>	<u>Check Sample</u>	<u>Result*</u>	<u>Units</u>	<u>True</u>	<u>%R</u>	<u>PQL</u>
Sequence: 1508056 Analysis: ICPOE Tot. Rec. Metals						
Aluminum	IFA1	60,462.8	ug/L	60,000	101	50.0
	IFB1	59,581.8	ug/L	60,000	99	50.0
Beryllium	IFA1	-0.5	ug/L			5.00
	IFB1	100.1	ug/L	100	100	5.00
Calcium	IFA1	290,448.4	ug/L	300,000	97	250
	IFB1	286,874.7	ug/L	300,000	96	250
Iron	IFA1	236,531.9	ug/L	250,000	95	250
	IFB1	234,587.7	ug/L	250,000	94	250
Magnesium	IFA1	143,175.3	ug/L	150,000	95	250
	IFB1	141,656.1	ug/L	150,000	94	250
Manganese	IFA1	1.0	ug/L			5.00
	IFB1	197.1	ug/L	200	99	5.00
Potassium	IFA1	-324.6	ug/L			1000
	IFB1	20,624.6	ug/L	20,000	103	1000
Sodium	IFA1	51,721.2	ug/L	50,000	103	1000
	IFB1	50,847.3	ug/L	50,000	102	1000
Zinc	IFA1	0.3	ug/L			20.0
	IFB1	293.8	ug/L	300	98	20.0

\*Criteria = 80-120%R of True Value or +/- PQL

See raw data for complete analyte list and results.

TDF #: [none]

TechLaw, Inc. - ESAT Region 8 Detection Limit (PQL) Standard ICPMS-PE DRC-II				
Metals (Dissolved) by EPA 200/7000 Series Methods Sequence: 1508051				
Analyte	True	Found	%R	Units
Antimony	1.00	1.02	102	ug/L
Arsenic	2.00	2.29	114	ug/L
Barium	10.0	9.79	98	ug/L
Cadmium	0.200	0.119	60	ug/L
Chromium	2.00	1.67	84	ug/L
Cobalt	0.200	0.188	94	ug/L
Copper	1.00	0.942	94	ug/L
Lead	0.200	0.161	81	ug/L
Molybdenum	1.00	0.954	95	ug/L
Nickel	1.00	1.17	117	ug/L
Selenium	2.00	2.39	120	ug/L
Silver	1.00	0.978	98	ug/L
Thallium	1.00	0.882	88	ug/L
Vanadium	2.00	1.76	88	ug/L

Recovery Control Limits: 70-130% except Pb, Tl, Sb, &amp; Hg at 50-150%. No limits for Al, Ca, Fe, K, Mg &amp; Na.



TDF #: [none]

TechLaw, Inc. - ESAT Region 8 Detection Limit (PQL) Standard ICPOE - PE Optima				
Metals (Dissolved) by EPA 200/7000 Series Methods				
Sequence: 1508049				
Analyte	True	Found	%R	Units
Aluminum	100	98.62	99	ug/L
Beryllium	5.00	5.060	101	ug/L
Calcium	250	251.6	101	ug/L
Iron	100	94.73	95	ug/L
Magnesium	1000	1030	103	ug/L
Manganese	10.0	10.47	105	ug/L
Potassium	1000	1044	104	ug/L
Sodium	1000	1031	103	ug/L
Zinc	50.0	53.16	106	ug/L

Recovery Control Limits: 70-130% except Pb, Tl, Sb, &amp; Hg at 50-150%. No limits for Al, Ca, Fe, K, Mg &amp; Na.

TDF #: [none]

TechLaw, Inc. - ESAT Region 8 Detection Limit (PQL) Standard ICPMS-PE DRC-II				
Metals (Total Recov) by EPA 200/7000 Series Methods				
Sequence: 1508057				
Analyte	True	Found	%R	Units
Antimony	1.00	1.057	106	ug/L
Arsenic	2.00	1.918	96	ug/L
Barium	10.0	9.494	95	ug/L
Cadmium	0.200	0.1921	96	ug/L
Chromium	2.00	1.682	84	ug/L
Cobalt	0.200	0.1965	98	ug/L
Copper	1.00	1.027	103	ug/L
Lead	0.200	0.2049	102	ug/L
Molybdenum	1.00	1.025	102	ug/L
Nickel	1.00	0.9616	96	ug/L
Selenium	2.00	2.079	104	ug/L
Silver	1.00	0.9362	94	ug/L
Thallium	1.00	0.9511	95	ug/L
Vanadium	2.00	1.981	99	ug/L

Recovery Control Limits: 70-130% except Pb, Tl, Sb, &amp; Hg at 50-150%. No limits for Al, Ca, Fe, K, Mg &amp; Na.

TDF #: [none]

TechLaw, Inc. - ESAT Region 8 Detection Limit (PQL) Standard ICPOE - PE Optima				
Metals (Total Recov) by EPA 200/7000 Series Methods				
Sequence: 1508056				
Analyte	True	Found	%R	Units
Aluminum	100	110.5	111	ug/L
Beryllium	5.00	5.101	102	ug/L
Calcium	250	249.2	100	ug/L
Iron	100	85.92	86	ug/L
Magnesium	1000	1013	101	ug/L
Manganese	10.0	10.40	104	ug/L
Potassium	1000	1063	106	ug/L
Sodium	1000	1021	102	ug/L
Zinc	50.0	52.73	105	ug/L

Recovery Control Limits: 70-130% except Pb, Tl, Sb, &amp; Hg at 50-150%. No limits for Al, Ca, Fe, K, Mg &amp; Na.

TDF #: [none]

## TechLaw Inc, ESAT Region 8

## INSTRUMENT ANALYSIS SEQUENCE LOG

Analytical Method: EPA 310.1

Total

Sequence ID#: 1508048

Instrument ID #: Mettler AT

Water

LSR #:

Analysis ID	Sample Name	Analysis Date	Analysis Time
1508047-SRM1	Reference	08/10/15	02:36
1508047-BLK1	Blank	08/10/15	02:36
C150802-66	GKMSW12-080915	08/10/15	02:36
1508047-DUP1	Duplicate	08/10/15	02:36
C150802-27	GKMSW01-080915	08/10/15	02:36
C150802-33	GKMSW02-080915	08/10/15	02:36
C150802-39	GKMSW03-080915	08/10/15	02:36
C150802-45	GKMSW04-080915	08/10/15	02:36
C150802-51	GKMSW05-080915	08/10/15	02:36
C150802-63	GKMSW08-080915	08/10/15	02:36
1508048-CCV1	Calibration Check	08/10/15	02:36
1508048-CCB1	Calibration Blank	08/10/15	02:36

TDF #: [none]

## TechLaw Inc, ESAT Region 8

## INSTRUMENT ANALYSIS SEQUENCE LOG

Analytical Method: 200.7

Dissolved

Sequence ID#: 1508049

Instrument ID #: ICPOE - PE Optima

Water

LSR #:

Analysis ID	Sample Name	Analysis Date	Analysis Time
1508049-ICV1	Initial Cal Check	08/10/15	00:51
1508049-SCV1	Secondary Cal Check	08/10/15	00:55
1508049-ICB1	Initial Cal Blank	08/10/15	00:58
1508049-CRL1	Instrument RL Check	08/10/15	01:01
1508049-IFA1	Interference Check A	08/10/15	01:04
1508049-IFB1	Interference Check B	08/10/15	01:07
1508038-BLK1	Blank	08/10/15	01:12
1508038-BS1	Blank Spike	08/10/15	01:15
C150802-23	GKMSW01-080815	08/10/15	01:18
1508038-DUP1	Duplicate	08/10/15	01:21
1508049-SRD1	Serial Dilution	08/10/15	01:24
1508038-MS1	Matrix Spike	08/10/15	01:27
C150802-26	GKMSW01-080915	08/10/15	01:30
1508038-MS2	Matrix Spike	08/10/15	01:34
C150802-02	AMIMAS-ROTARY PARK-0C	08/10/15	01:37
C150802-05	AMIMAS-ROTARY PARK-0C	08/10/15	01:40
1508049-CCV1	Calibration Check	08/10/15	01:43
1508049-CCB1	Calibration Blank	08/10/15	01:46
C150802-08	AMIMAS-ROTARY PARK-1C	08/10/15	01:49
C150802-11	AMIMAS-ROTARY PARK-2C	08/10/15	01:53
C150802-14	AMIMAS-ROTARY PARK-21	08/10/15	01:56
C150802-17	AMIMAS-ROTARY PARK-22	08/10/15	01:59
C150802-20	AMIMAS-ROTARY PARK-23	08/10/15	02:02
C150802-29	GKMSW02-080815	08/10/15	02:05
C150802-32	GKMSW02-080915	08/10/15	02:08
C150802-35	GKMSW03-080815	08/10/15	02:11
C150802-38	GKMSW03-080915	08/10/15	02:15
1508049-CCV2	Calibration Check	08/10/15	02:21
1508049-CCB2	Calibration Blank	08/10/15	02:24
1508041-BLK1	Blank	08/10/15	02:29
1508041-BS1	Blank Spike	08/10/15	02:32
C150802-41	GKMSW04-080815	08/10/15	02:35
1508041-DUP1	Duplicate	08/10/15	02:38
1508049-SRD2	Serial Dilution	08/10/15	02:42
1508041-MS1	Matrix Spike	08/10/15	02:45
C150802-44	GKMSW04-080915	08/10/15	02:48
C150802-47	GKMSW05-080815	08/10/15	02:51
C150802-50	GKMSW05-080915	08/10/15	02:54

TDF #: [none]

## TechLaw Inc, ESAT Region 8

## INSTRUMENT ANALYSIS SEQUENCE LOG

Analytical Method: 200.7

Dissolved

Sequence ID#: 1508049

Instrument ID #: ICPOE - PE Optima

Water

LSR #:

Analysis ID	Sample Name	Analysis Date	Analysis Time
1508049-CCV3	Calibration Check	08/10/15	03:00
1508049-CCB3	Calibration Blank	08/10/15	03:04
C150802-53	GKMSW06-080815	08/10/15	03:07
C150802-56	GKMSW07-080815	08/10/15	03:10
C150802-59	GKMSW08-080815	08/10/15	03:13
C150802-62	GKMSW08-080915	08/10/15	03:16
C150802-65	GKMSW12-080915	08/10/15	03:19
C150802-68	GKMTB01-080815	08/10/15	03:22
1508049-CCV4	Calibration Check	08/10/15	03:28
1508049-CCB4	Calibration Blank	08/10/15	03:32

TDF #: [none]

## TechLaw Inc, ESAT Region 8

## INSTRUMENT ANALYSIS SEQUENCE LOG

Analytical Method: 245.1

Total

Sequence ID#: 1508050

Instrument ID #: CVAA FIMS - PE

Water

LSR #:

Analysis ID	Sample Name	Analysis Date	Analysis Time
1508050-ICV1	Initial Cal Check	08/10/15	06:17
1508050-ICB1	Initial Cal Blank	08/10/15	06:17
1508050-SCV1	Secondary Cal Check	08/10/15	06:17
1508050-IBL1	Instrument Blank	08/10/15	06:17
1508045-BS1	Blank Spike	08/10/15	06:17
1508045-BLK1	Blank	08/10/15	06:17
1508045-DUP1	Duplicate	08/10/15	06:17
C150802-01	AMIMAS-ROTARY PARK-0C	08/10/15	06:17
1508045-MS1	Matrix Spike	08/10/15	06:17
C150802-04	AMIMAS-ROTARY PARK-0C	08/10/15	06:17
C150802-07	AMIMAS-ROTARY PARK-1C	08/10/15	06:17
C150802-10	AMIMAS-ROTARY PARK-2C	08/10/15	06:17
C150802-13	AMIMAS-ROTARY PARK-21	08/10/15	06:17
C150802-16	AMIMAS-ROTARY PARK-22	08/10/15	06:17
1508050-CCV1	Calibration Check	08/10/15	06:17
1508050-CCB1	Calibration Blank	08/10/15	06:17
C150802-19	AMIMAS-ROTARY PARK-23	08/10/15	06:17
C150802-22	GKMSW01-080815	08/10/15	06:17
C150802-25	GKMSW01-080915	08/10/15	06:17
C150802-28	GKMSW02-080815	08/10/15	06:17
C150802-31	GKMSW02-080915	08/10/15	06:17
1508045-MS2	Matrix Spike	08/10/15	06:17
C150802-34	GKMSW03-080815	08/10/15	06:17
C150802-37	GKMSW03-080915	08/10/15	06:17
C150802-40	GKMSW04-080815	08/10/15	06:17
C150802-43	GKMSW04-080915	08/10/15	06:17
1508050-CCV2	Calibration Check	08/10/15	06:17
1508050-CCB2	Calibration Blank	08/10/15	06:17
C150802-46	GKMSW05-080815	08/10/15	06:17
C150802-49	GKMSW05-080915	08/10/15	06:17
C150802-52	GKMSW06-080815	08/10/15	06:17
C150802-55	GKMSW07-080815	08/10/15	06:17
C150802-58	GKMSW08-080815	08/10/15	06:17
C150802-61	GKMSW08-080915	08/10/15	06:17
1508045-BS2	Blank Spike	08/10/15	06:17
1508045-BLK2	Blank	08/10/15	06:17
1508045-DUP2	Duplicate	08/10/15	06:17
1508045-MS3	Matrix Spike	08/10/15	06:17

Project Name: Upper Animas\_Surface Water 2\_AUG 2015\_A096

Certificate of Analysis

TDF #: [none]

TechLaw Inc, ESAT Region8

**INSTRUMENT ANALYSIS SEQUENCE LOG**

Analytical Method: 245.1

Total

Sequence ID#: 1508050

Instrument ID #: CVAA FIMS - PE

Water

LSR #:

Analysis ID	Sample Name	Analysis Date	Analysis Time
1508050-CCV3	Calibration Check	08/10/15	06:17
1508050-CCB3	Calibration Blank	08/10/15	06:17
C150802-64	GKMSW12-080915	08/10/15	06:17
C150802-67	GKMTB01-080815	08/10/15	06:17
1508050-CCV4	Calibration Check	08/10/15	06:17
1508050-CCB4	Calibration Blank	08/10/15	06:17



TDF #: [none]

## TechLaw Inc, ESAT Region 8

## INSTRUMENT ANALYSIS SEQUENCE LOG

Analytical Method: 200.8

Dissolved

Sequence ID#: 1508051

Instrument ID #: ICPMS-PE DRC-II

Water

LSR #:

Analysis ID	Sample Name	Analysis Date	Analysis Time
1508051-ICV1	Initial Cal Check	08/10/15	01:12
1508051-SCV1	Secondary Cal Check	08/10/15	01:15
1508051-ICB1	Initial Cal Blank	08/10/15	01:19
1508051-CRL1	Instrument RL Check	08/10/15	01:22
1508051-IFA1	Interference Check A	08/10/15	01:25
1508051-IFB1	Interference Check B	08/10/15	01:29
1508039-BLK1	Blank	08/10/15	01:32
1508039-BS1	Blank Spike	08/10/15	01:35
C150802-23	GKMSW01-080815	08/10/15	01:38
1508039-DUP1	Duplicate	08/10/15	01:41
1508051-SRD1	Serial Dilution	08/10/15	01:44
1508039-MS1	Matrix Spike	08/10/15	01:47
C150802-26	GKMSW01-080915	08/10/15	01:50
1508039-MS2	Matrix Spike	08/10/15	01:54
C150802-02	AMIMAS-ROTARY PARK-0C	08/10/15	01:57
C150802-05	AMIMAS-ROTARY PARK-0C	08/10/15	02:00
1508051-CCV1	Calibration Check	08/10/15	02:03
1508051-CCB1	Calibration Blank	08/10/15	02:06
C150802-08	AMIMAS-ROTARY PARK-1C	08/10/15	02:09
C150802-11	AMIMAS-ROTARY PARK-2C	08/10/15	02:13
C150802-14	AMIMAS-ROTARY PARK-21	08/10/15	02:16
C150802-17	AMIMAS-ROTARY PARK-22	08/10/15	02:19
C150802-20	AMIMAS-ROTARY PARK-23	08/10/15	02:22
C150802-29	GKMSW02-080815	08/10/15	02:25
C150802-32	GKMSW02-080915	08/10/15	02:28
C150802-35	GKMSW03-080815	08/10/15	02:31
C150802-38	GKMSW03-080915	08/10/15	02:34
1508051-CCV2	Calibration Check	08/10/15	02:40
1508051-CCB2	Calibration Blank	08/10/15	02:44
1508042-BLK1	Blank	08/10/15	02:49
1508042-BS1	Blank Spike	08/10/15	02:52
C150802-41	GKMSW04-080815	08/10/15	02:55
1508042-DUP1	Duplicate	08/10/15	02:58
1508051-SRD2	Serial Dilution	08/10/15	03:01
1508042-MS1	Matrix Spike	08/10/15	03:04
C150802-44	GKMSW04-080915	08/10/15	03:07
C150802-47	GKMSW05-080815	08/10/15	03:10
C150802-50	GKMSW05-080915	08/10/15	03:13

TDF #: [none]

## TechLaw Inc, ESAT Region 8

## INSTRUMENT ANALYSIS SEQUENCE LOG

Analytical Method: 200.8

Dissolved

Sequence ID#: 1508051

Instrument ID #: ICPMS-PE DRC-II

Water

LSR #:

Analysis ID	Sample Name	Analysis Date	Analysis Time
1508051-CCV3	Calibration Check	08/10/15	03:20
1508051-CCB3	Calibration Blank	08/10/15	03:23
C150802-53	GKMSW06-080815	08/10/15	03:26
C150802-56	GKMSW07-080815	08/10/15	03:29
C150802-59	GKMSW08-080815	08/10/15	03:32
C150802-62	GKMSW08-080915	08/10/15	03:36
C150802-65	GKMSW12-080915	08/10/15	03:39
C150802-68	GKMTB01-080815	08/10/15	03:42
1508051-CCV4	Calibration Check	08/10/15	03:48
1508051-CCB4	Calibration Blank	08/10/15	03:51

TDF #: [none]

## TechLaw Inc, ESAT Region 8

## INSTRUMENT ANALYSIS SEQUENCE LOG

Analytical Method: 150.1

WET

Sequence ID#: 1508053

Instrument ID #: pH Meter

Water

LSR #:

Analysis ID	Sample Name	Analysis Date	Analysis Time
C150802-03	AMIMAS-ROTARY PARK-0C	08/10/15	04:16
C150802-06	AMIMAS-ROTARY PARK-0C	08/10/15	04:16
C150802-09	AMIMAS-ROTARY PARK-1C	08/10/15	04:16
C150802-12	AMIMAS-ROTARY PARK-2C	08/10/15	04:16
C150802-15	AMIMAS-ROTARY PARK-21	08/10/15	04:16
C150802-18	AMIMAS-ROTARY PARK-22	08/10/15	04:16
C150802-21	AMIMAS-ROTARY PARK-23	08/10/15	04:16

TDF #: [none]

## TechLaw Inc, ESAT Region 8

## INSTRUMENT ANALYSIS SEQUENCE LOG

Analytical Method: 200.7

Total Recoverable

Sequence ID#: 1508056

Instrument ID #: ICPOE - PE Optima

Water

LSR #:

Analysis ID	Sample Name	Analysis Date	Analysis Time
1508056-ICV1	Initial Cal Check	08/10/15	06:06
1508056-SCV1	Secondary Cal Check	08/10/15	06:10
1508056-ICB1	Initial Cal Blank	08/10/15	06:13
1508056-CRL1	Instrument RL Check	08/10/15	06:16
1508056-IFA1	Interference Check A	08/10/15	06:19
1508056-IFB1	Interference Check B	08/10/15	06:23
1508043-BLK1	Blank	08/10/15	06:27
1508043-SRM1	Reference	08/10/15	06:30
C150802-22	GKMSW01-080815	08/10/15	06:33
1508043-DUP1	Duplicate	08/10/15	06:36
1508056-SRD1	Serial Dilution	08/10/15	06:39
1508043-MS1	Matrix Spike	08/10/15	06:43
C150802-25	GKMSW01-080915	08/10/15	06:46
1508043-MS3	Matrix Spike	08/10/15	06:49
C150802-01	AMIMAS-ROTARY PARK-0C	08/10/15	06:52
1508056-CCV1	Calibration Check	08/10/15	06:58
1508056-CCB1	Calibration Blank	08/10/15	07:01
C150802-04	AMIMAS-ROTARY PARK-0C	08/10/15	07:04
C150802-07	AMIMAS-ROTARY PARK-1C	08/10/15	07:07
C150802-10	AMIMAS-ROTARY PARK-2C	08/10/15	07:10
C150802-13	AMIMAS-ROTARY PARK-21	08/10/15	07:14
C150802-16	AMIMAS-ROTARY PARK-22	08/10/15	07:17
C150802-19	AMIMAS-ROTARY PARK-23	08/10/15	07:20
C150802-28	GKMSW02-080815	08/10/15	07:23
C150802-31	GKMSW02-080915	08/10/15	07:26
C150802-34	GKMSW03-080815	08/10/15	07:29
C150802-37	GKMSW03-080915	08/10/15	07:33
1508056-CCV2	Calibration Check	08/10/15	07:36
1508056-CCB2	Calibration Blank	08/10/15	07:39
1508046-BLK1	Blank	08/10/15	07:44
1508046-SRM1	Reference	08/10/15	07:47
C150802-40	GKMSW04-080815	08/10/15	07:50
1508046-DUP1	Duplicate	08/10/15	07:53
1508056-SRD2	Serial Dilution	08/10/15	07:57
1508046-MS1	Matrix Spike	08/10/15	08:00
C150802-43	GKMSW04-080915	08/10/15	08:03
C150802-46	GKMSW05-080815	08/10/15	08:06
C150802-49	GKMSW05-080915	08/10/15	08:09

TDF #: [none]

## TechLaw Inc, ESAT Region 8

## INSTRUMENT ANALYSIS SEQUENCE LOG

Analytical Method: 200.7

Total Recoverable

Sequence ID#: 1508056

Instrument ID #: ICPOE - PE Optima

Water

LSR #:

Analysis ID	Sample Name	Analysis Date	Analysis Time
1508056-CCV3	Calibration Check	08/10/15	08:15
1508056-CCB3	Calibration Blank	08/10/15	08:19
C150802-52	GKMSW06-080815	08/10/15	08:22
C150802-55	GKMSW07-080815	08/10/15	08:25
C150802-58	GKMSW08-080815	08/10/15	08:28
C150802-61	GKMSW08-080915	08/10/15	08:31
C150802-64	GKMSW12-080915	08/10/15	08:34
C150802-67	GKMTB01-080815	08/10/15	08:37
1508056-CCV4	Calibration Check	08/10/15	08:44
1508056-CCB4	Calibration Blank	08/10/15	08:47

TDF #: [none]

## TechLaw Inc, ESAT Region 8

## INSTRUMENT ANALYSIS SEQUENCE LOG

Analytical Method: 200.8

Total Recoverable

Sequence ID#: 1508057

Instrument ID #: ICPMS-PE DRC-II

Water

LSR #:

Analysis ID	Sample Name	Analysis Date	Analysis Time
1508057-ICV1	Initial Cal Check	08/10/15	07:45
1508057-SCV1	Secondary Cal Check	08/10/15	07:48
1508057-ICB1	Initial Cal Blank	08/10/15	07:51
1508057-CRL1	Instrument RL Check	08/10/15	07:55
1508057-IFA1	Interference Check A	08/10/15	07:58
1508057-IFB1	Interference Check B	08/10/15	08:01
1508043-BLK2	Blank	08/10/15	08:05
C150802-22	GKMSW01-080815	08/10/15	08:08
1508043-DUP2	Duplicate	08/10/15	08:11
1508057-SRD1	Serial Dilution	08/10/15	08:14
1508043-SRM2	Reference	08/10/15	08:17
1508043-MS2	Matrix Spike	08/10/15	08:20
C150802-25	GKMSW01-080915	08/10/15	08:23
1508043-MS4	Matrix Spike	08/10/15	08:26
C150802-01	AMIMAS-ROTARY PARK-0C	08/10/15	08:29
1508057-CCV1	Calibration Check	08/10/15	08:35
1508057-CCB1	Calibration Blank	08/10/15	08:39
C150802-04	AMIMAS-ROTARY PARK-0C	08/10/15	08:42
C150802-07	AMIMAS-ROTARY PARK-1C	08/10/15	08:45
C150802-10	AMIMAS-ROTARY PARK-2C	08/10/15	08:48
C150802-13	AMIMAS-ROTARY PARK-21	08/10/15	08:51
C150802-16	AMIMAS-ROTARY PARK-22	08/10/15	08:54
C150802-19	AMIMAS-ROTARY PARK-23	08/10/15	08:57
C150802-28	GKMSW02-080815	08/10/15	09:01
C150802-31	GKMSW02-080915	08/10/15	09:04
C150802-34	GKMSW03-080815	08/10/15	09:07
C150802-37	GKMSW03-080915	08/10/15	09:10
1508057-CCV2	Calibration Check	08/10/15	09:13
1508057-CCB2	Calibration Blank	08/10/15	09:16
1508046-BLK2	Blank	08/10/15	09:21
C150802-40	GKMSW04-080815	08/10/15	09:24
1508046-DUP2	Duplicate	08/10/15	09:27
1508057-SRD2	Serial Dilution	08/10/15	09:30
1508046-SRM2	Reference	08/10/15	09:33
1508046-MS2	Matrix Spike	08/10/15	09:36
C150802-43	GKMSW04-080915	08/10/15	09:39
C150802-46	GKMSW05-080815	08/10/15	09:42
C150802-49	GKMSW05-080915	08/10/15	09:45

TDF #: [none]

## TechLaw Inc, ESAT Region 8

## INSTRUMENT ANALYSIS SEQUENCE LOG

Analytical Method: 200.8

Total Recoverable

Sequence ID#: 1508057

Instrument ID #: ICPMS-PE DRC-II

Water

LSR #:

Analysis ID	Sample Name	Analysis Date	Analysis Time
1508057-CCV3	Calibration Check	08/10/15	09:51
1508057-CCB3	Calibration Blank	08/10/15	09:55
C150802-52	GKMSW06-080815	08/10/15	09:58
C150802-55	GKMSW07-080815	08/10/15	10:01
C150802-58	GKMSW08-080815	08/10/15	10:04
C150802-61	GKMSW08-080915	08/10/15	10:07
C150802-64	GKMSW12-080915	08/10/15	10:10
C150802-67	GKMTB01-080815	08/10/15	10:14
1508057-CCV4	Calibration Check	08/10/15	10:20
1508057-CCB4	Calibration Blank	08/10/15	10:23